

APPENDIX E

HIRA BACKUP

Appendix E4 available electronically.

Peninsula Hampton Hazard Mitigation Plan Update

Name, Jurisdiction & Dept:

Email & Phone:

DATA NEEDS Please check the data/plans that your jurisdiction currently has available and can provide for the 2010 HMP update.	GIS/Spatial Data (i.e. *.shp, PGDB...)	Digital Reports	Hard Copy Reports	DATA STATUS (What DEWBERRY CURRENTLY HAS OR WHAT IS NEEDED). <i>If your locality has more current data please let us know who we should contact for it</i>
BASE MAP DATA				
Political Boundaries	x			<i>Jurisdictional boundaries GIS file from Regional Commission</i>
Transportation/Railways/Transit Routes	x			<i>Transportation and Public Transit GIS files from Regional Commission</i>
Population/Census Data or Local Data				<i>Default: will use US Census, Weldon Cooper Center, and Virginia Workforce Connection for current population, population projections and changes</i>
Imagery				NOT NEEDED
ASSETS <i>Information on building specifics (i.e. year built, sq. ft., construction material, building value, first floor elevation, etc.)</i>				
Tax Parcels				NEED FROM LOCALITIES (if available)
Zoning	x			<i>Land use/ Zoning GIS files from Regional Commission. Localities should provide additional information if available to supplement.</i>
Building Footprints				NEED FROM LOCALITIES (if available)
Critical Facilities <i>Does your jurisdiction have a definition of critical facility? (law enforcement, hospitals, fire, schools, lifelines, communication centers, airports, etc.)</i>	x			NEED FROM LOCALITIES (if available) <i>The Regional Commission has suggested we use the Virginia Economic Development Partnership (VEDP) for correctional facilities, schools, hospitals, nursing homes, fire and rescue stations.</i> <i>Dewberry also have access to facilities that were part of the Hampton Evacuation Plan (data from approx. 2007). These include Airports, Ferry Docking, R&R, Bus, Hospitals, Urgent Care, Nursing Homes. The majority of this data is from the Homeland Security Infrastructure Program (HSIP).</i> <i>If localities maintain critical facility data it would be beneficial to provide in order for analysis to be completed using the most current data.</i>
Critical Infrastructure (pipelines, transmission lines, utilities, water treatment facilities, telecom infrastructure, dams, major highways, bridges, etc.)				NEED FROM LOCALITIES (if available) <i>The National Pipeline Mapping System provides estimated locations of pipelines. If jurisdictions have more detailed information this would be beneficial to the analysis.</i>
Locations of facilities with hazardous materials and/or biological hazards (i.e. labs) on site				NEED FROM LOCALITIES (if available) <i>The EPA's Right-to-Know website catalogs various locations housing hazardous materials. This list may or may not be comprehensive for each jurisdiction, so if the jurisdictions have additional information, this would be beneficial. Dewberry is also working on the Peninsula's LEPC plan.</i>
Additional Important Facilities (Major Employers, Banks, Gov't functions, etc.)				<i>The Regional Commission has suggested we use the Virginia Economic Development Partnership (VEDP) for this information</i>
LAND USE AND DEVELOPMENT				
Land Use and/or Land Cover data or information on future development				<i>see above in "Zoning"</i>
Areas of future development				<i>see above in "Zoning"</i> <i>Joint Land Use Studies (JLUS), if completed, would be beneficial</i>
HAZARD DATA				

Hazard analysis completed for other projects (i.e. Storm Surge Models, Dam Inundation Studies, etc.)				<p><i>Storm surge (SLOSH) modeling has been provided by VDEM. If localities have completed additional analysis information would be appreciated.</i></p> <p><i>Any information on dam inundation studies, or other hazard related studies (i.e. sea level rise) this would be beneficial for the plan.</i></p> <p><i>**Need DFIRM data from localities: Cities of Williamsburg, Newport News and Hampton. Dewberry will follow-up with FEMA to see if they have preliminary maps that can be used.</i></p> <p><i>**Do localities have any data or studies completed for erosion?</i></p>
Mapped or text descriptions of the locations of past hazards (i.e. flood prone areas, locations of landslides)				<i>Any information would be beneficial</i>
REPORTS/PLANS				
Reports from specific past hazard events				<i>Any information would be beneficial</i>
Detailed loss records from previous hazard occurrences				<i>Any information would be beneficial</i>

Peninsula Hampton Hazard Mitigation Plan Update [continued]

Name, Jurisdiction & Dept:

Email & Phone:

DATA NEEDS Please populate any additional data/plans that your jurisdiction currently has available and can provide for the 2010 HMP update.	GIS Data	Digital Reports	Hard Copy Reports	Name & Contact Information List who should be contacted for the Data Sets and/or Plans
ADDITIONAL GIS DATA OR PLANS AVAILABLE				
Describe Problem Areas / Historical Occurrences				
Problem Spot Areas, Events and Photos can be uploaded to the SharePoint site (https://projects.dewberry.com/PHMP)				
<i>In the "Shared Folder" sections:</i>				
->Jurisdiction Hazard Photos				
->Jurisdiction Hazard Problem Spots				
DATA UPLOAD SITES				
Data can be uploaded to the SharePoint site (https://projects.dewberry.com/PHMP) or to the secure ftp site: ftp.dewberry.com Username: PHMPhmp Password: 5X25X2 **If data is posted please let us know so we can pull it down.				
DEWBERRY CONTACTS				
Carrie Speranza 703.849.0367		csperanza@Dewberry.com		
Deborah Mills		dmills@Dewberry.com		
Ryan Towell (HIRA)		rtowell@Dewberry.com		
Rachael Herman (HIRA)		rherman@Dewberry.com		

City of Hampton Hurricane Total Annualized Loss (HAZUS)

Legend

Total Loss by Census Tract

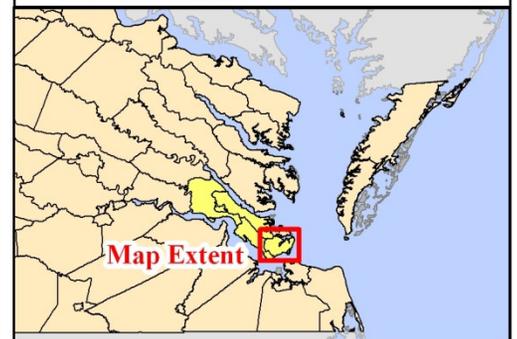
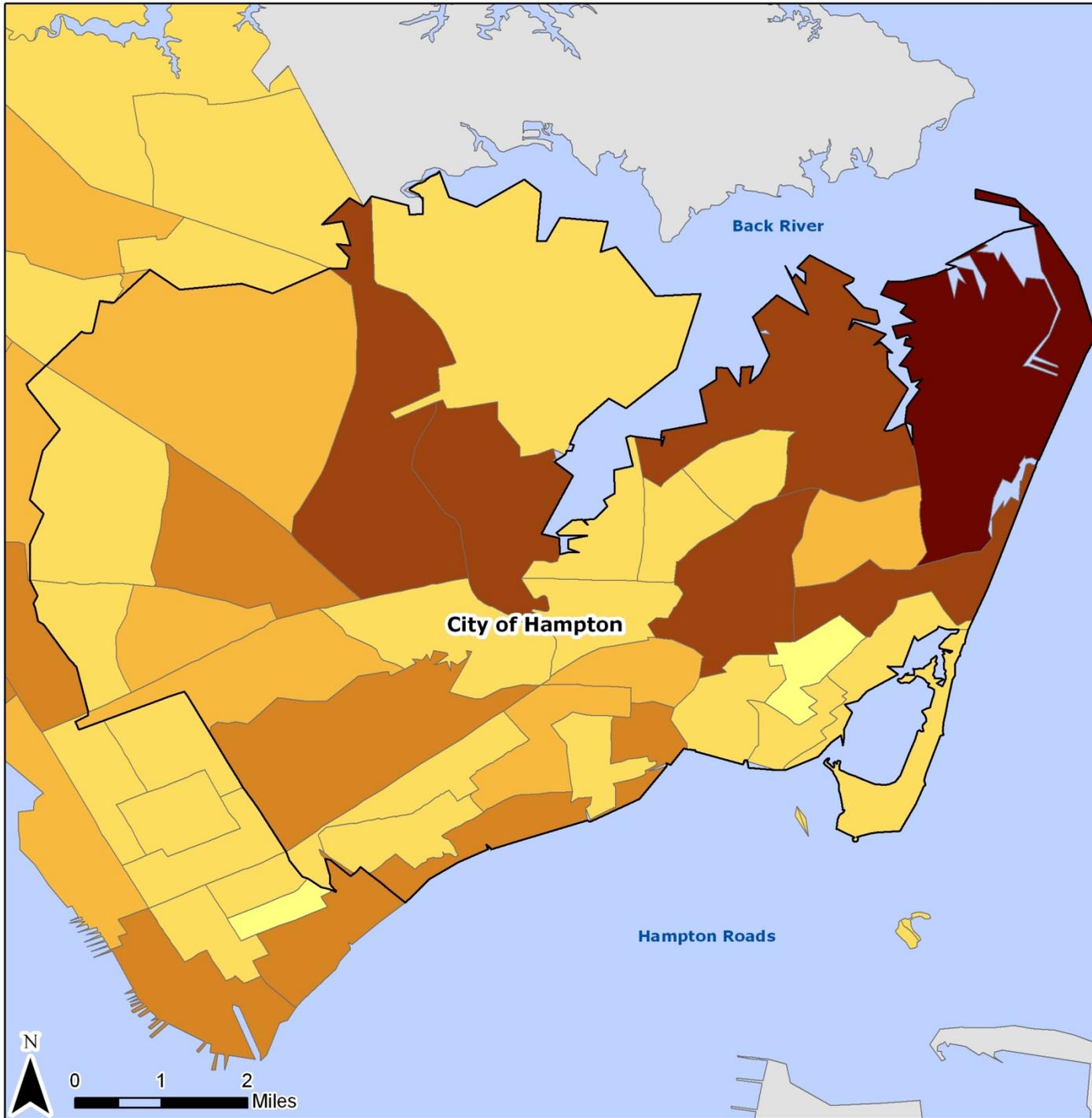


Map Description:
Probabilistic Annualized loss was calculated by HAZUS-MH using the probabilistic scenario. Annualized loss is defined as the expected value of loss in any one year, and is developed by aggregating the losses and their exceedance probabilities.

Total Direct Economic Loss includes: Damage to Structural, Non-Structural Building, Contents, Inventory Loss, Relocation, Income Loss, Rental Loss, and Wage Loss.

Data Sources

Jurisdictional Boundaries (ESRI)
Hurricane Total Annualized Loss (2009
HAZUS-MH MR4 runs)



James City County Hurricane Total Annualized Loss (HAZUS)

Legend

Total Loss by Census Tract

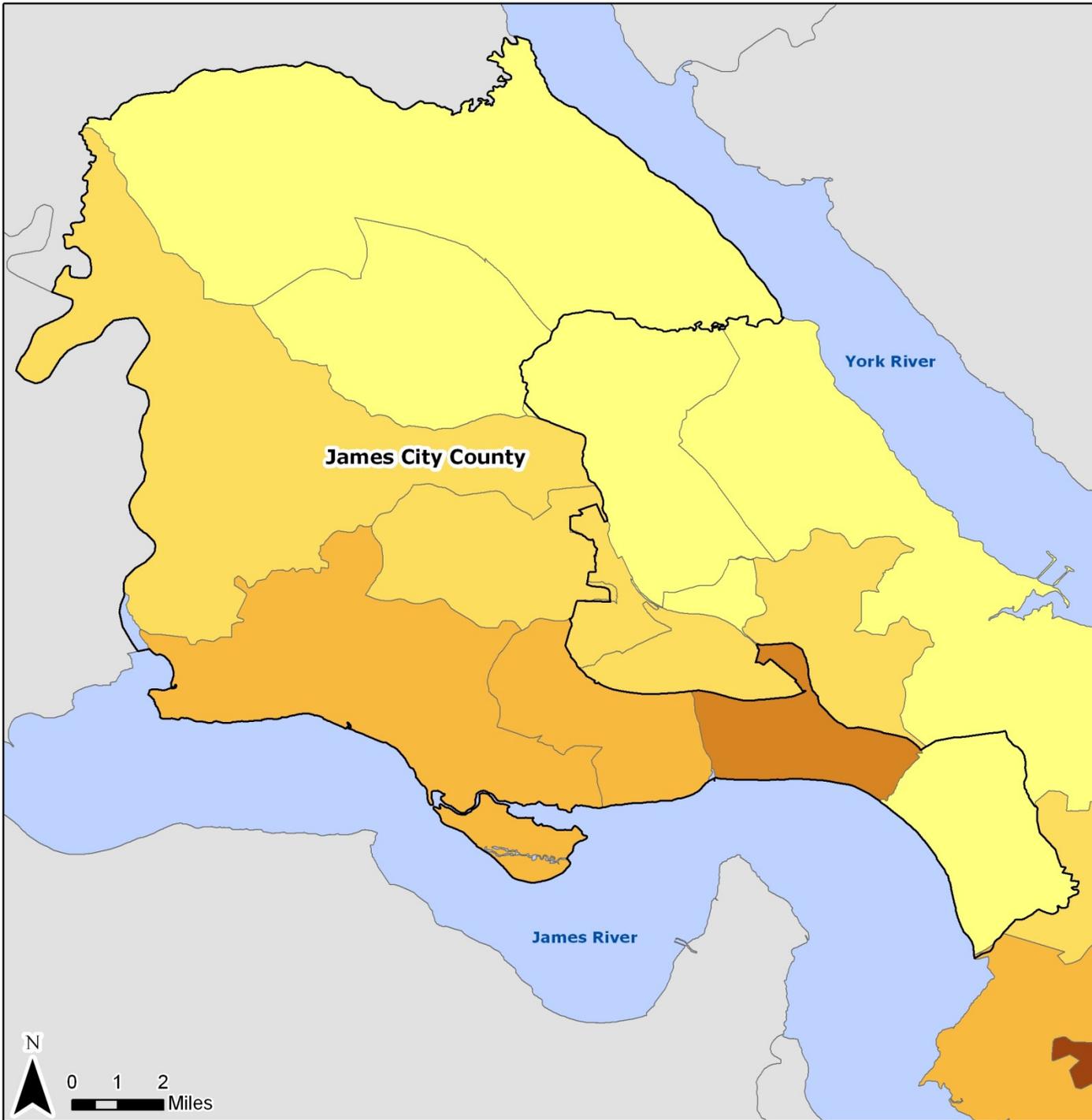


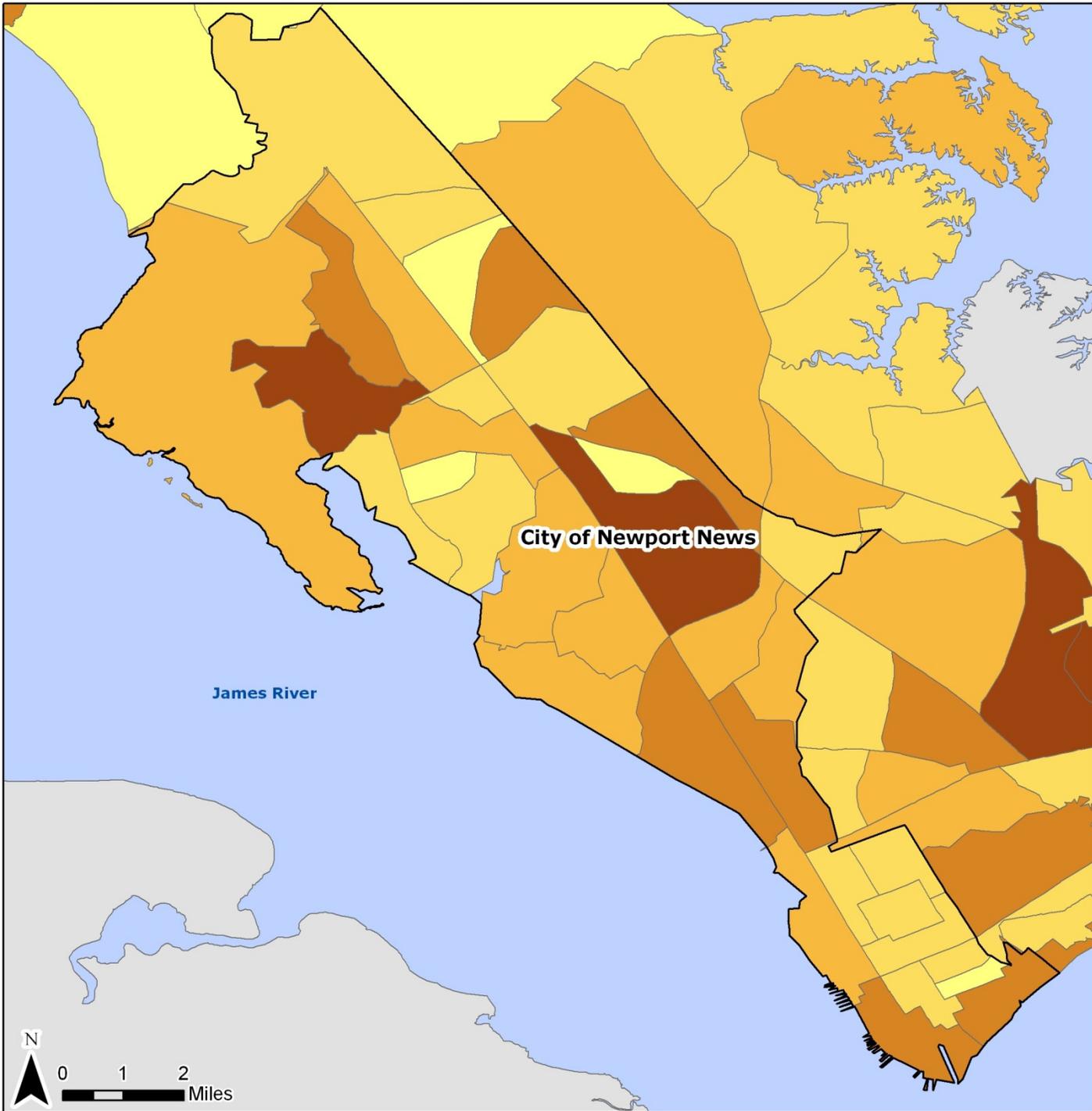
Map Description:
 Probabilistic Annualized loss was calculated by HAZUS-MH using the probabilistic scenario. Annualized loss is defined as the expected value of loss in any one year, and is developed by aggregating the losses and their exceedance probabilities.

Total Direct Economic Loss includes: Damage to Structural, Non-Structural Building, Contents, Inventory Loss, Relocation, Income Loss, Rental Loss, and Wage Loss.

Data Sources

Jurisdictional Boundaries (ESRI)
 Hurricane Total Annualized Loss (2009 HAZUS-MH MR4 runs)





City of Newport News Hurricane Total Annualized Loss (HAZUS)

Legend

Total Loss by Census Tract

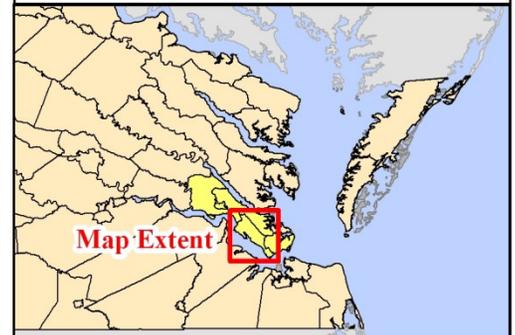
- < \$50,000
- \$50,000 - \$100,000
- \$100,000 - \$150,000
- \$150,000 - \$200,000
- \$200,000 - \$300,000
- > \$300,000

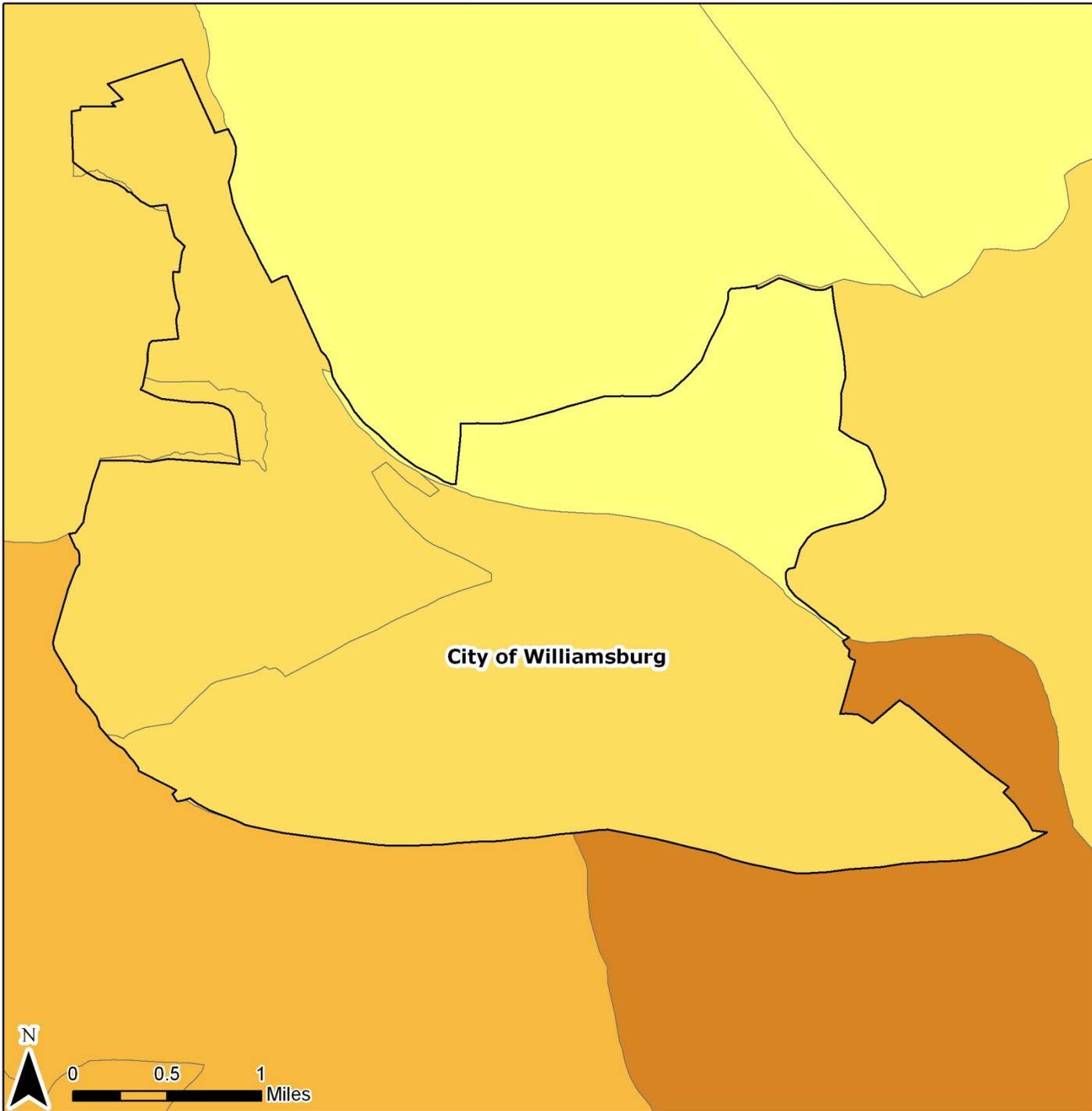
Map Description:
Probabilistic Annualized loss was calculated by HAZUS-MH using the probabilistic scenario. Annualized loss is defined as the expected value of loss in any one year, and is developed by aggregating the losses and their exceedance probabilities.

Total Direct Economic Loss includes: Damage to Structural, Non-Structural Building, Contents, Inventory Loss, Relocation, Income Loss, Rental Loss, and Wage Loss.

Data Sources

Jurisdictional Boundaries (ESRI)
Hurricane Total Annualized Loss (2009
HAZUS-MH MR4 runs)





City of Williamsburg Hurricane Total Annualized Loss (HAZUS)

Legend

Total Loss by Census Tract

- < \$50,000
- \$50,000 - \$100,000
- \$100,000 - \$150,000
- \$150,000 - \$200,000
- \$200,000 - \$300,000
- > \$300,000

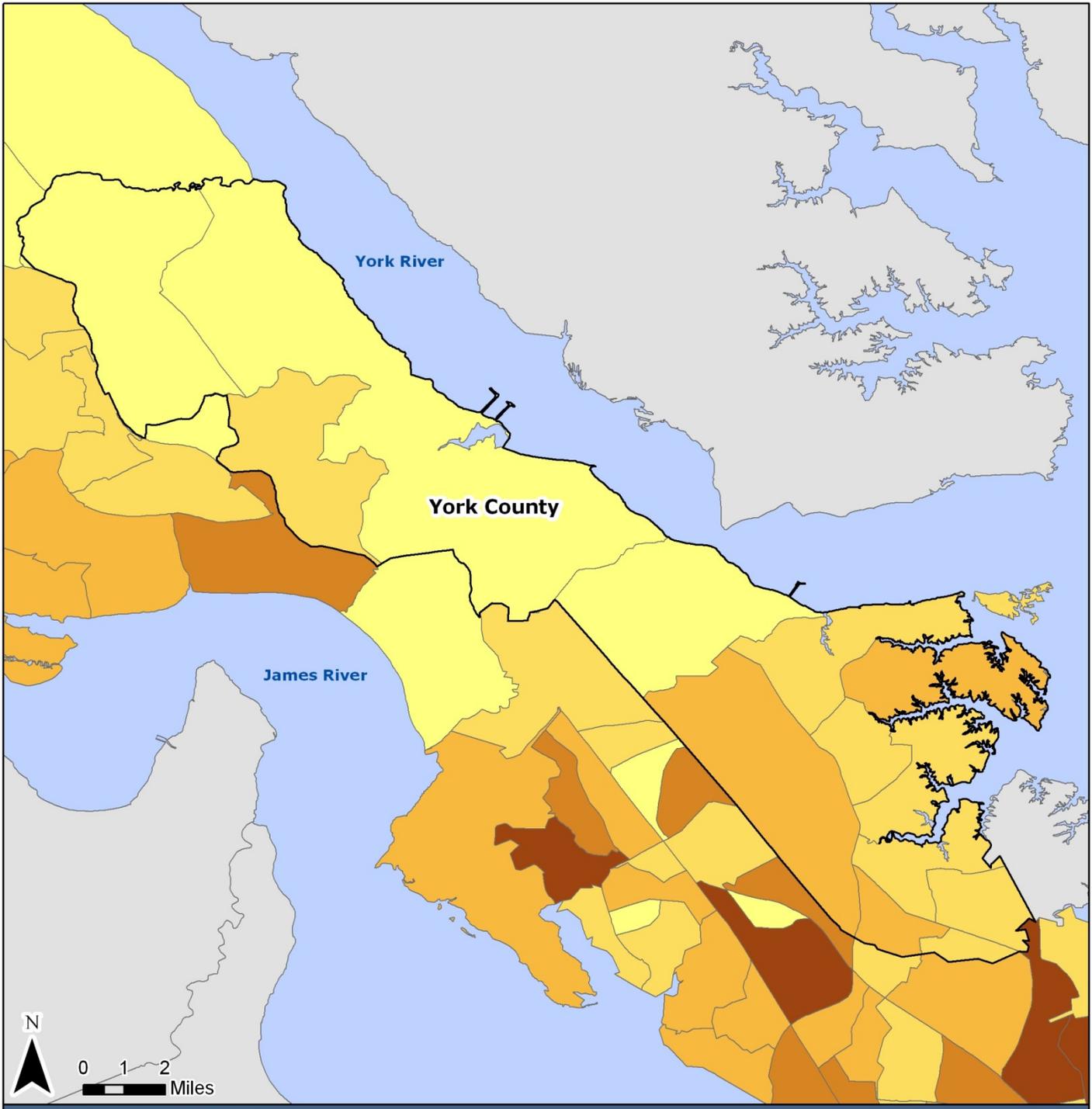
Map Description:
Probabilistic Annualized loss was calculated by HAZUS-MH using the probabilistic scenario. Annualized loss is defined as the expected value of loss in any one year, and is developed by aggregating the losses and their exceedance probabilities.

Total Direct Economic Loss includes: Damage to Structural, Non-Structural Building, Contents, Inventory Loss, Relocation, Income Loss, Rental Loss, and Wage Loss.

Data Sources

Jurisdictional Boundaries (ESRI)
Hurricane Total Annualized Loss (2009
HAZUS-MH MR4 runs)





York County Hurricane Total Annualized Loss (HAZUS)

Legend Total Loss by Census Tract

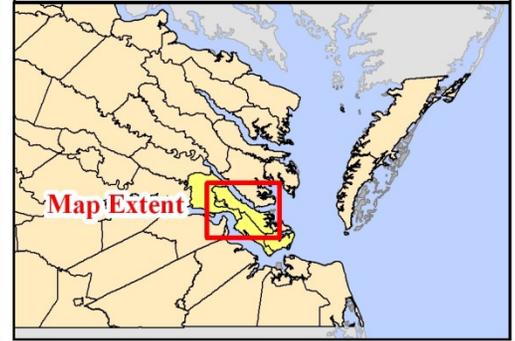
- < \$50,000
- \$50,000 - \$100,000
- \$100,000 - \$150,000
- \$150,000 - \$200,000
- \$200,000 - \$300,000
- > \$300,000

Map Description:
Probabilistic Annualized loss was calculated by HAZUS-MH using the probabilistic scenario. Annualized loss is defined as the expected value of loss in any one year, and is developed by aggregating the losses and their exceedance probabilities.

Total Direct Economic Loss includes: Damage to Structural, Non-Structural Building, Contents, Inventory Loss, Relocation, Income Loss, Rental Loss, and Wage Loss.

Data Sources

Jurisdictional Boundaries (ESRI)
Hurricane Total Annualized Loss (2009
HAZUS-MH MR4 runs)



Virginia Peninsula Hazard Mitigation Plan Update Hurricane Residential Loss (HAZUS)

Legend

Residential Loss by Census Tract

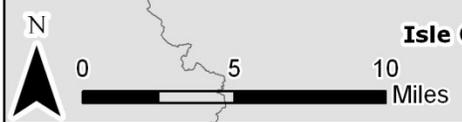
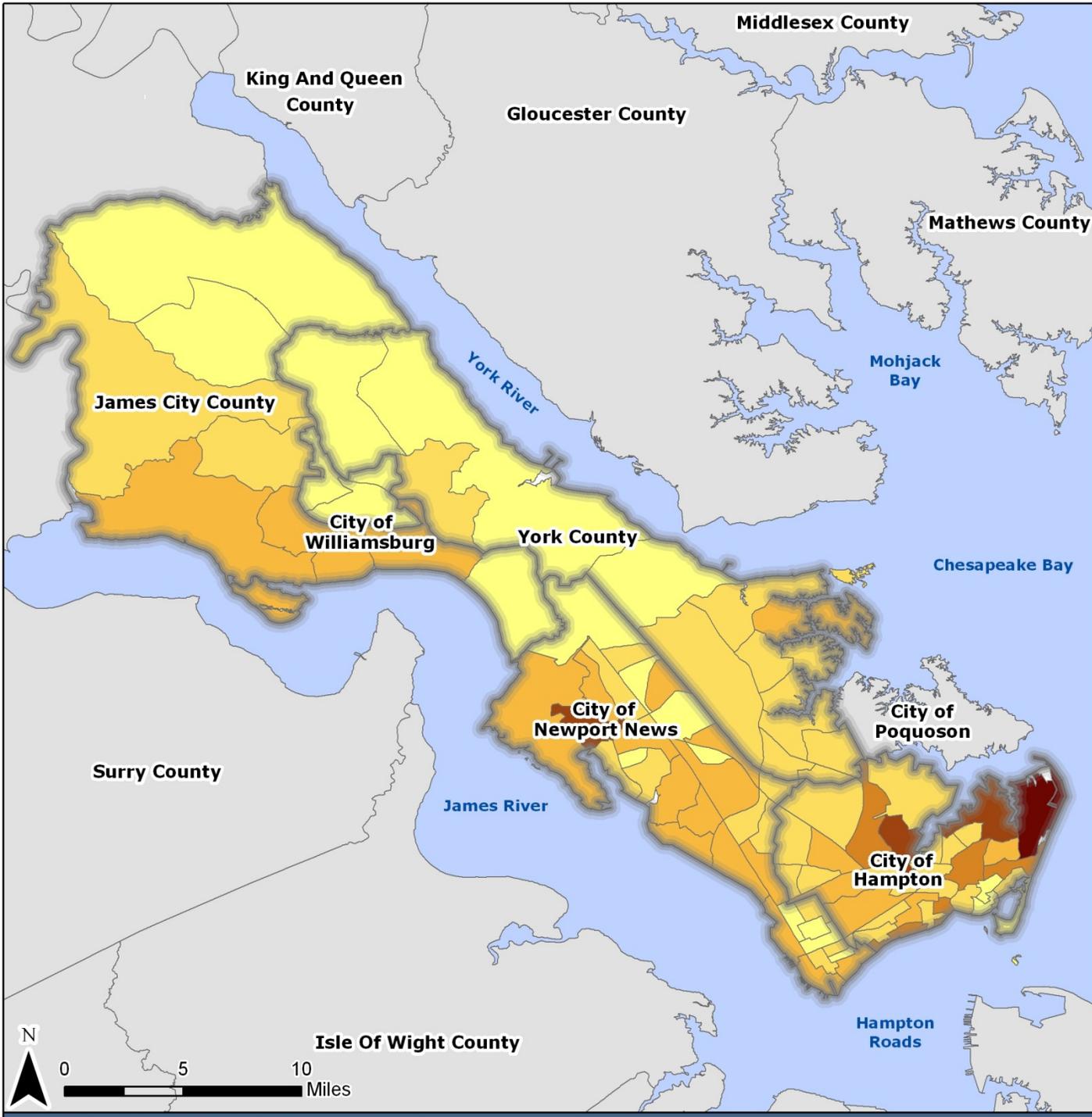


Map Description:
Probabilistic Annualized loss was calculated by HAZUS-MH using the probabilistic scenario. Annualized loss is defined as the expected value of loss in any one year, and is developed by aggregating the losses and their exceedance probabilities.

Residential Loss includes: Damage to Structural, Non-Structural Building, Contents, Inventory Loss, Relocation, Income Loss, Rental Loss, and Wage Loss.

Data Sources

Jurisdictional Boundaries (ESRI)
Hurricane Residential Loss (2009 HAZUS-MH MR4 runs)



Virginia Peninsula Hazard Mitigation Plan Update Hurricane Total Annualized Loss (HAZUS)

Legend

Total Loss by Census Tract

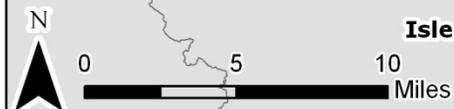
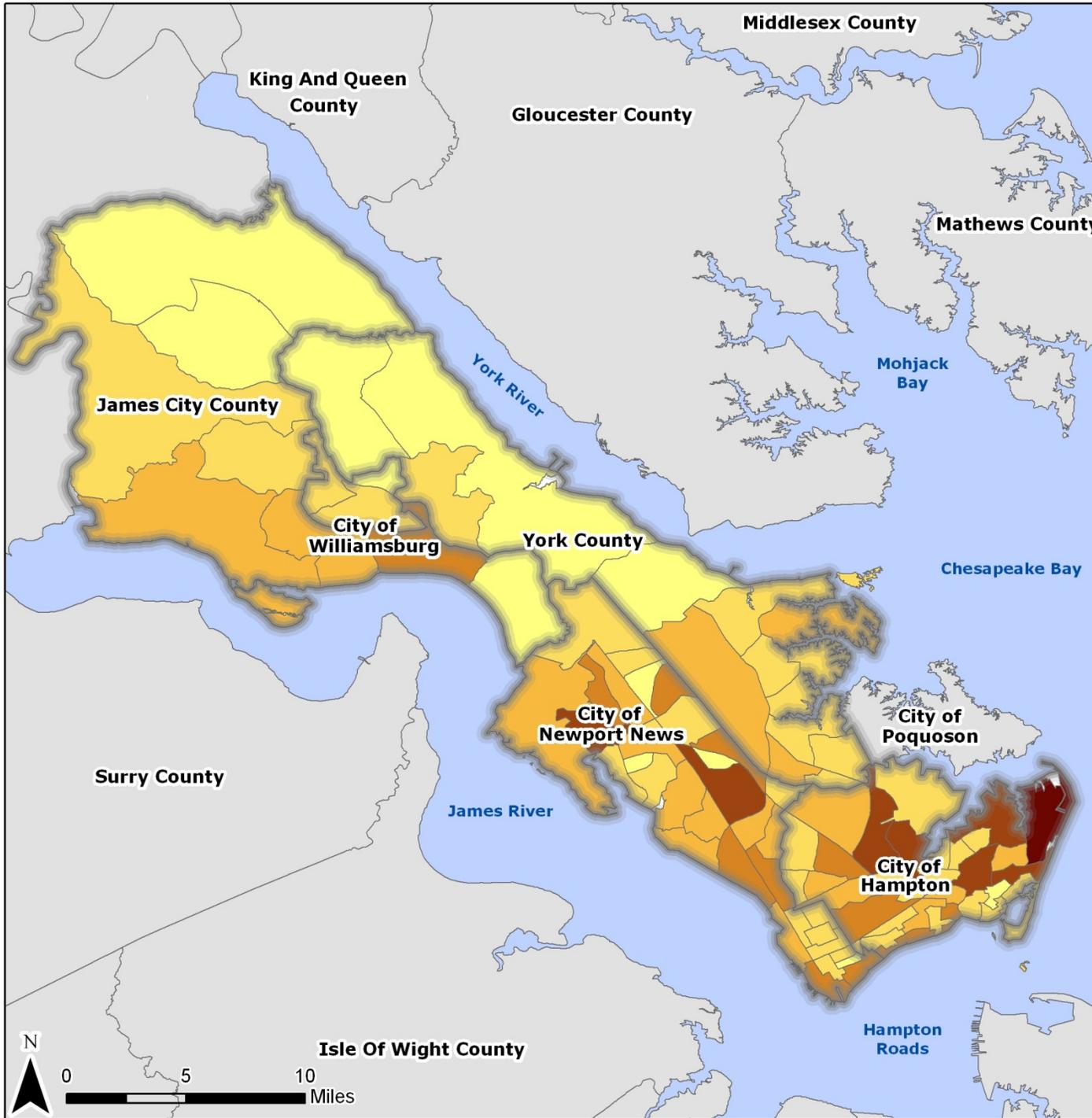


Map Description:
Probabilistic Annualized loss was calculated by HAZUS-MH using the probabilistic scenario. Annualized loss is defined as the expected value of loss in any one year, and is developed by aggregating the losses and their exceedance probabilities.

Total Direct Economic Loss includes: Damage to Structural, Non-Structural Building, Contents, Inventory Loss, Relocation, Income Loss, Rental Loss, and Wage Loss.

Data Sources

Jurisdictional Boundaries (ESRI)
Hurricane Total Annualized Loss (2009 HAZUS-MH MR4 runs)



City of Hampton Flood Annualized Total Loss (HAZUS)

Legend

Annualized Total Loss by Census Tract

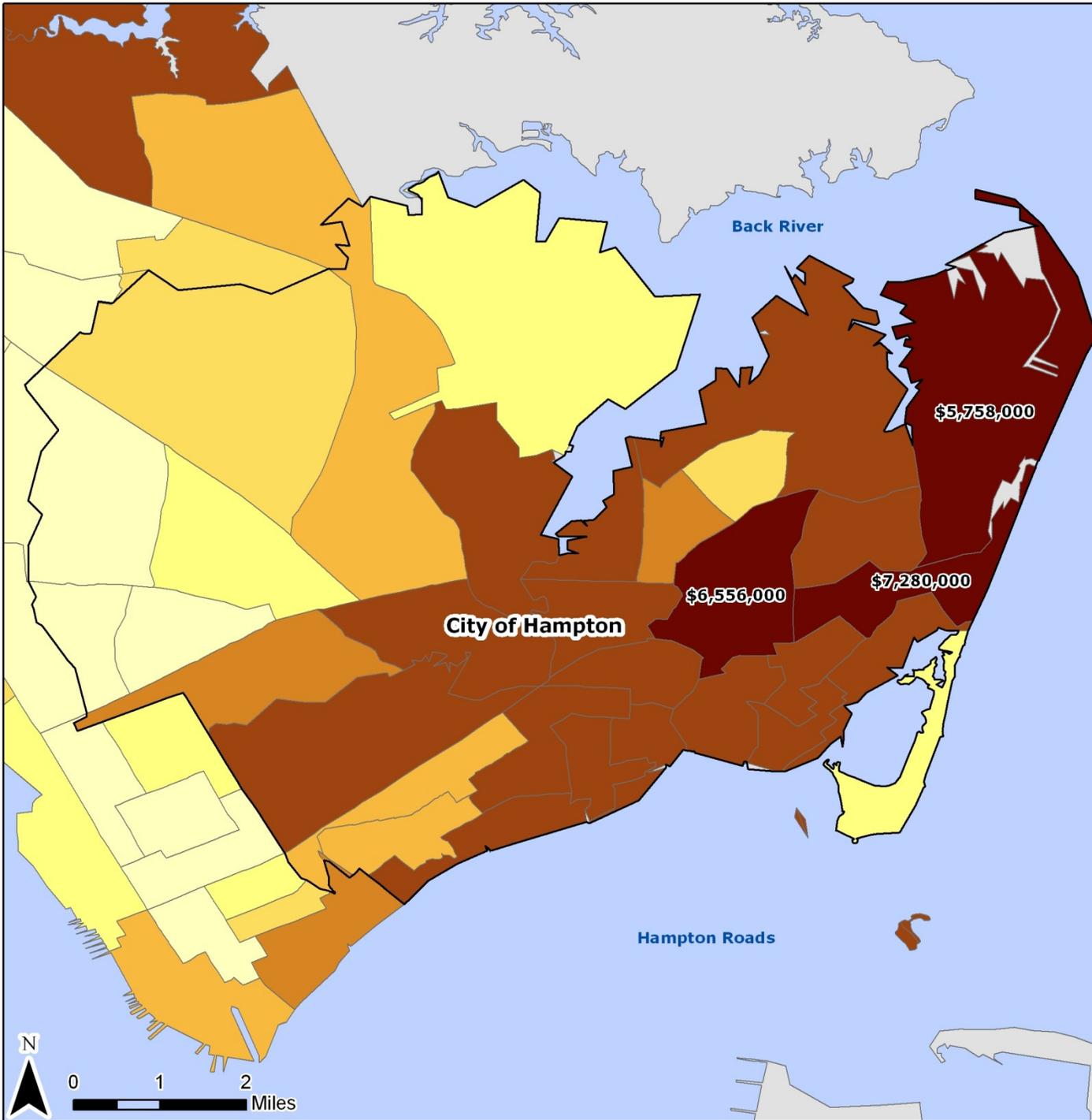
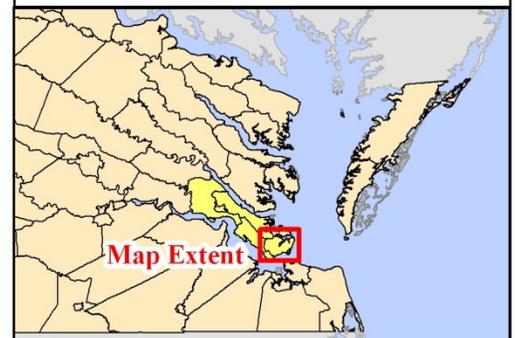
- No Loss Calculated
- < \$50,000
- \$50,000 - \$150,000
- \$150,000 - \$500,000
- \$500,000 - \$1 Million
- \$1 Million - \$5 Million
- > \$5 Million

Map Description:
 Probabilistic Annualized loss was calculated by HAZUS-MH using the probabilistic scenario. Annualized loss is defined as the expected value of loss in any one year, and is developed by aggregating the losses and their exceedance probabilities.

Total Direct Economic Loss includes: Damage to Structural, Non-Structural Building, Contents, Inventory Loss, Relocation, Income Loss, Rental Loss, and Wage Loss.

Data Sources

Jurisdictional Boundaries (ESRI)
 Flood Annualized Total Loss (2009
 HAZUS-MH MR4 runs)



James City County Flood Annualized Total Loss (HAZUS)

Legend

Annualized Total Loss by Census Tract

-  No Loss Calculated
-  < \$50,000
-  \$50,000 - \$150,000
-  \$150,000 - \$500,000
-  \$500,000 - \$1 Million
-  \$1 Million - \$5 Million
-  > \$5 Million

Map Description:
Probabilistic Annualized loss was calculated by HAZUS-MH using the probabilistic scenario. Annualized loss is defined as the expected value of loss in any one year, and is developed by aggregating the losses and their exceedance probabilities.

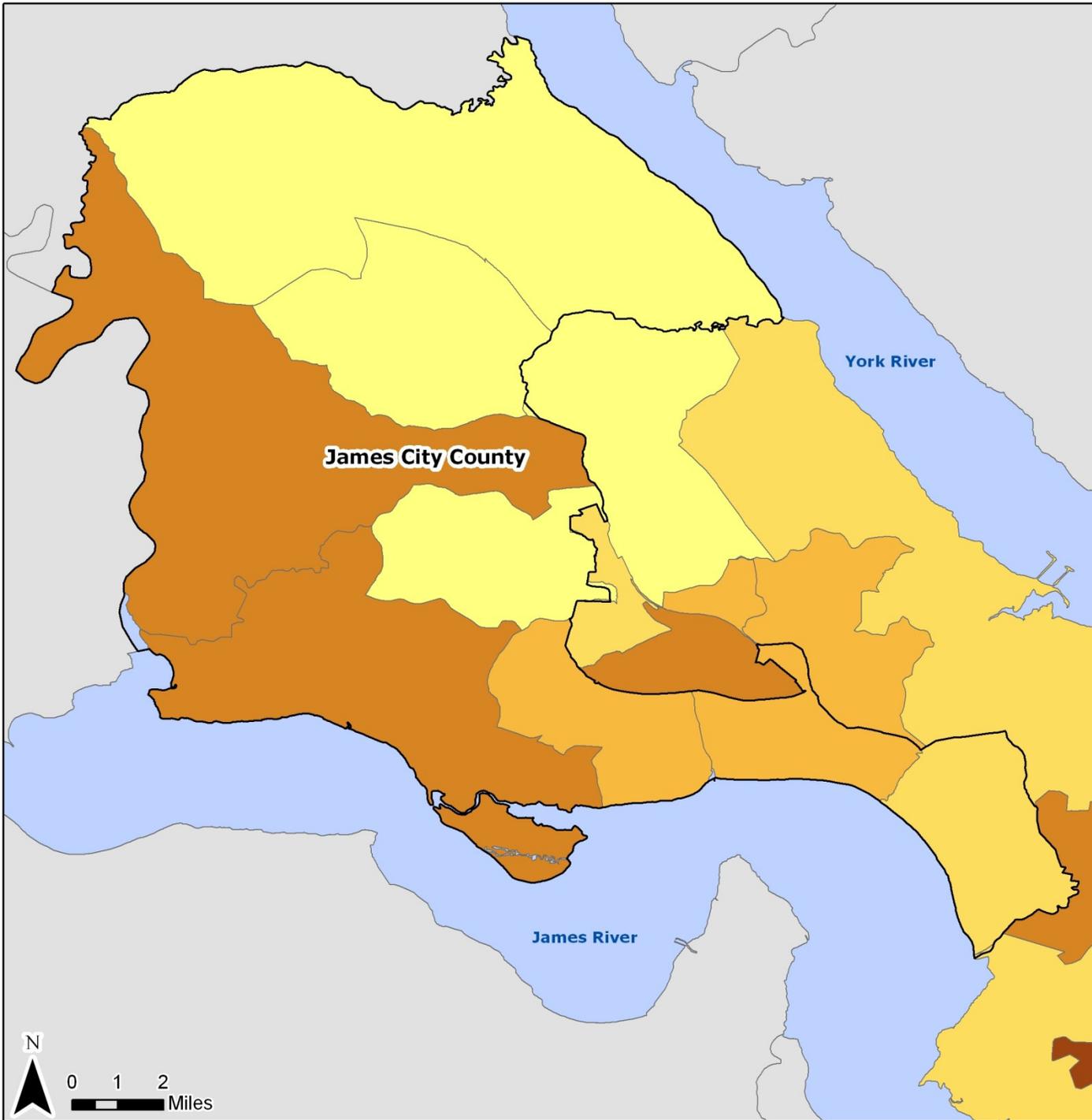
Total Direct Economic Loss includes: Damage to Structural, Non-Structural Building, Contents, Inventory Loss, Relocation, Income Loss, Rental Loss, and Wage Loss.

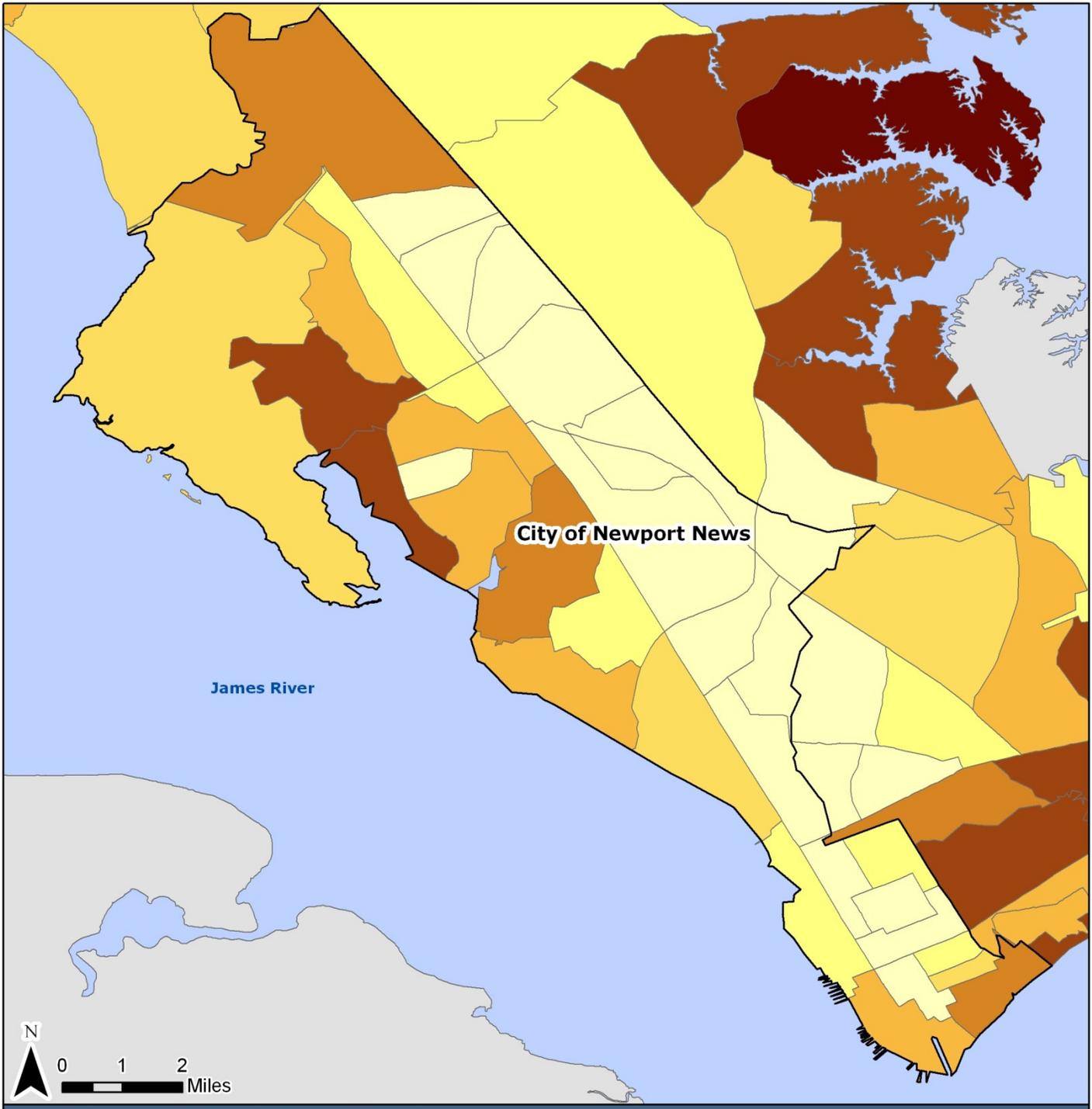
Data Sources

Jurisdictional Boundaries (ESRI)
Flood Total Annualized Loss (2009
HAZUS-MH MR4 runs)



Dewberry





City of Newport News Flood Annualized Total Loss (HAZUS)

Legend

Annualized Total Loss by Census Tract

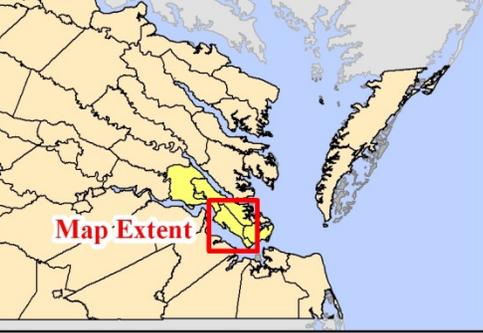
- No Loss Calculated
- < \$50, 000
- \$50,000 - \$150,000
- \$150,000 - \$500,000
- \$500,000 - \$1 Million
- \$1 Million - \$5 Million
- > \$5 Million

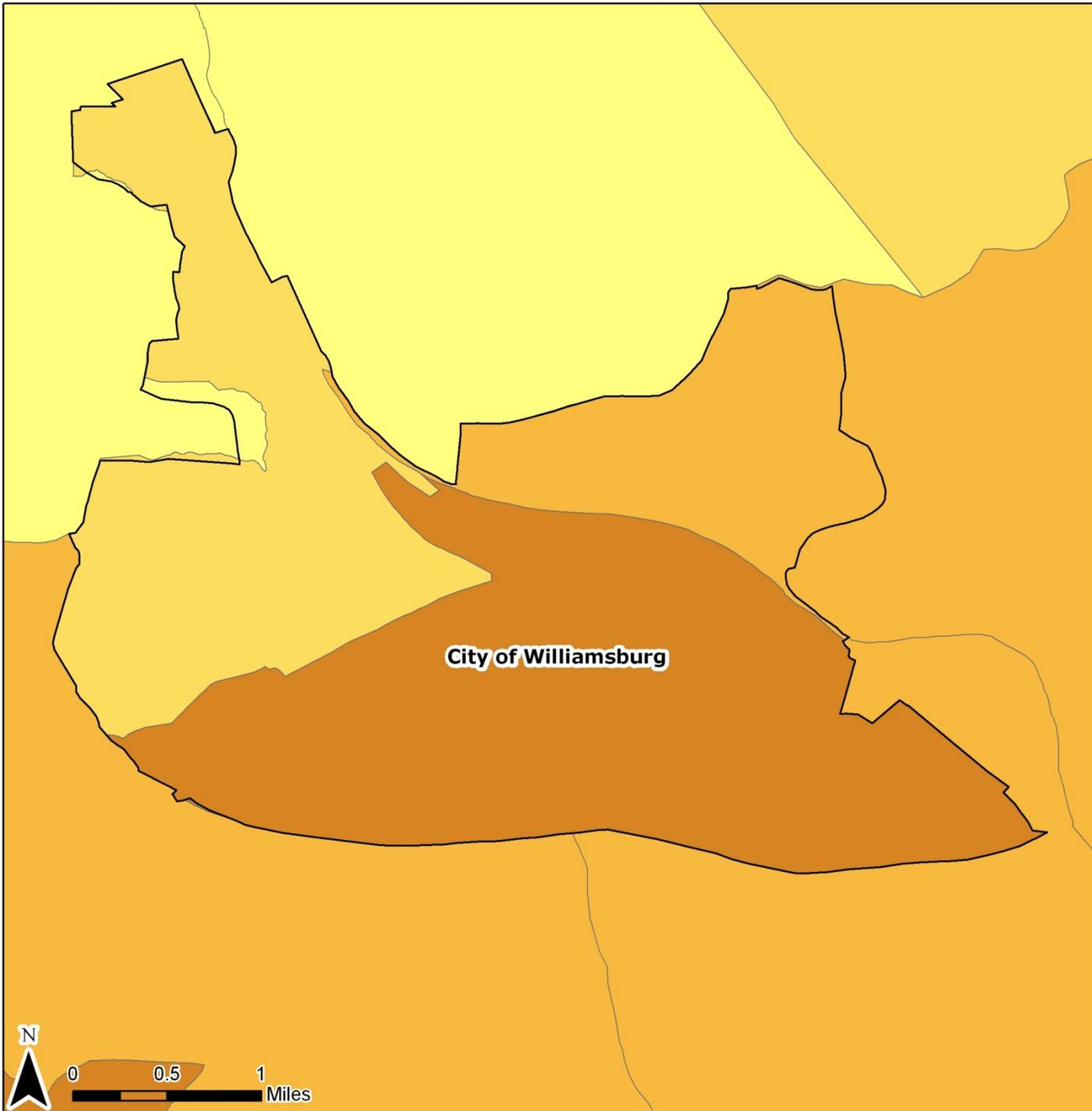
Map Description:
Probabilistic Annualized loss was calculated by HAZUS-MH using the probabilistic scenario. Annualized loss is defined as the expected value of loss in any one year, and is developed by aggregating the losses and their exceedance probabilities.

Total Direct Economic Loss includes: Damage to Structural, Non-Structural Building, Contents, Inventory Loss, Relocation, Income Loss, Rental Loss, and Wage Loss.

Data Sources

Jurisdictional Boundaries (ESRI)
Flood Total Annualized Loss (2009 HAZUS-MH MR4 runs)





City of Williamsburg Flood Annualized Total Loss (HAZUS)

Legend

Annualized Total Loss by Census Tract

-  No Loss Calculated
-  < \$50,000
-  \$50,000 - \$150,000
-  \$150,000 - \$500,000
-  \$500,000 - \$1 Million
-  \$1 Million - \$5 Million
-  > \$5 Million

Map Description:
Probabilistic Annualized loss was calculated by HAZUS-MH using the probabilistic scenario. Annualized loss is defined as the expected value of loss in any one year, and is developed by aggregating the losses and their exceedance probabilities.

Total Direct Economic Loss includes: Damage to Structural, Non-Structural Building, Contents, Inventory Loss, Relocation, Income Loss, Rental Loss, and Wage Loss.

Data Sources

Jurisdictional Boundaries (ESRI)
Flood Total Annualized Loss (2009
HAZUS-MH MR4 runs)



York County Flood Annualized Total Loss (HAZUS)

Legend

Annualized Total Loss by Census Tract

- No Loss Calculated
- < \$50,000
- \$50,000 - \$150,000
- \$150,000 - \$500,000
- \$500,000 - \$1 Million
- \$1 Million - \$5 Million
- > \$5 Million

Map Description:
Probabilistic Annualized loss was calculated by HAZUS-MH using the probabilistic scenario. Annualized loss is defined as the expected value of loss in any one year, and is developed by aggregating the losses and their exceedance probabilities.

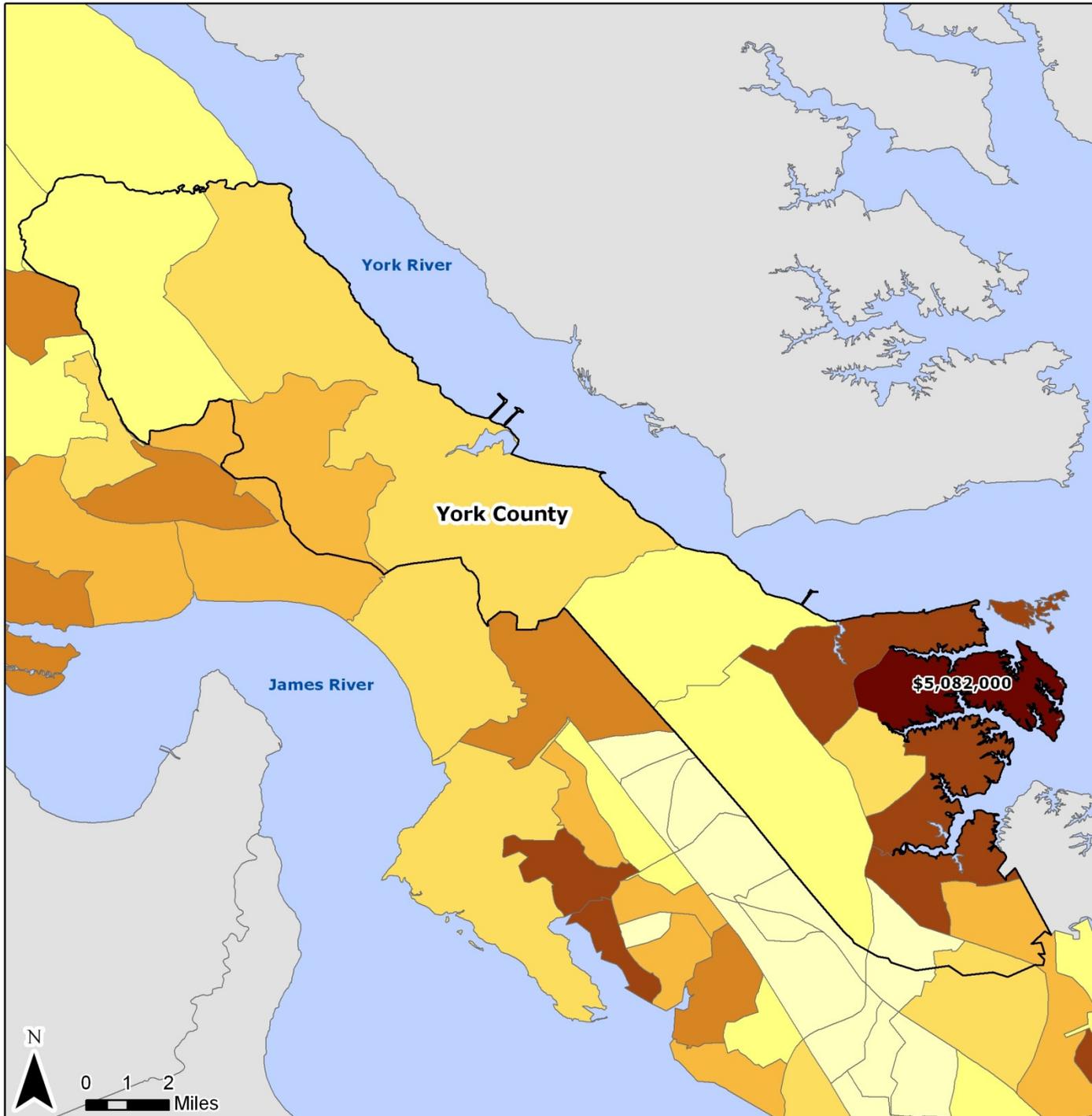
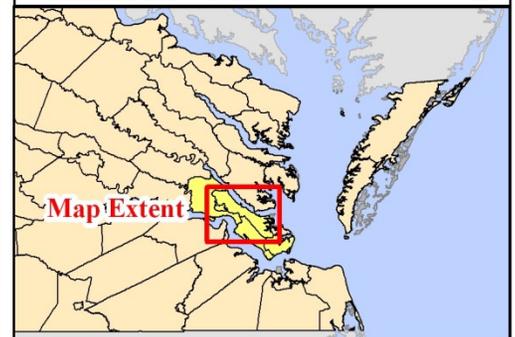
Total Direct Economic Loss includes: Damage to Structural, Non-Structural Building, Contents, Inventory Loss, Relocation, Income Loss, Rental Loss, and Wage Loss.

Data Sources

Jurisdictional Boundaries (ESRI)
Flood Total Annualized Loss (2009
HAZUS-MH MR4 runs)



Dewberry



Virginia Peninsula Hazard Mitigation Plan Update

Total Economic Loss 100-Year Flood (HAZUS)

Legend

100 Year Flood Loss by Census Tract

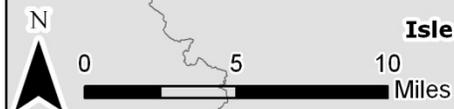
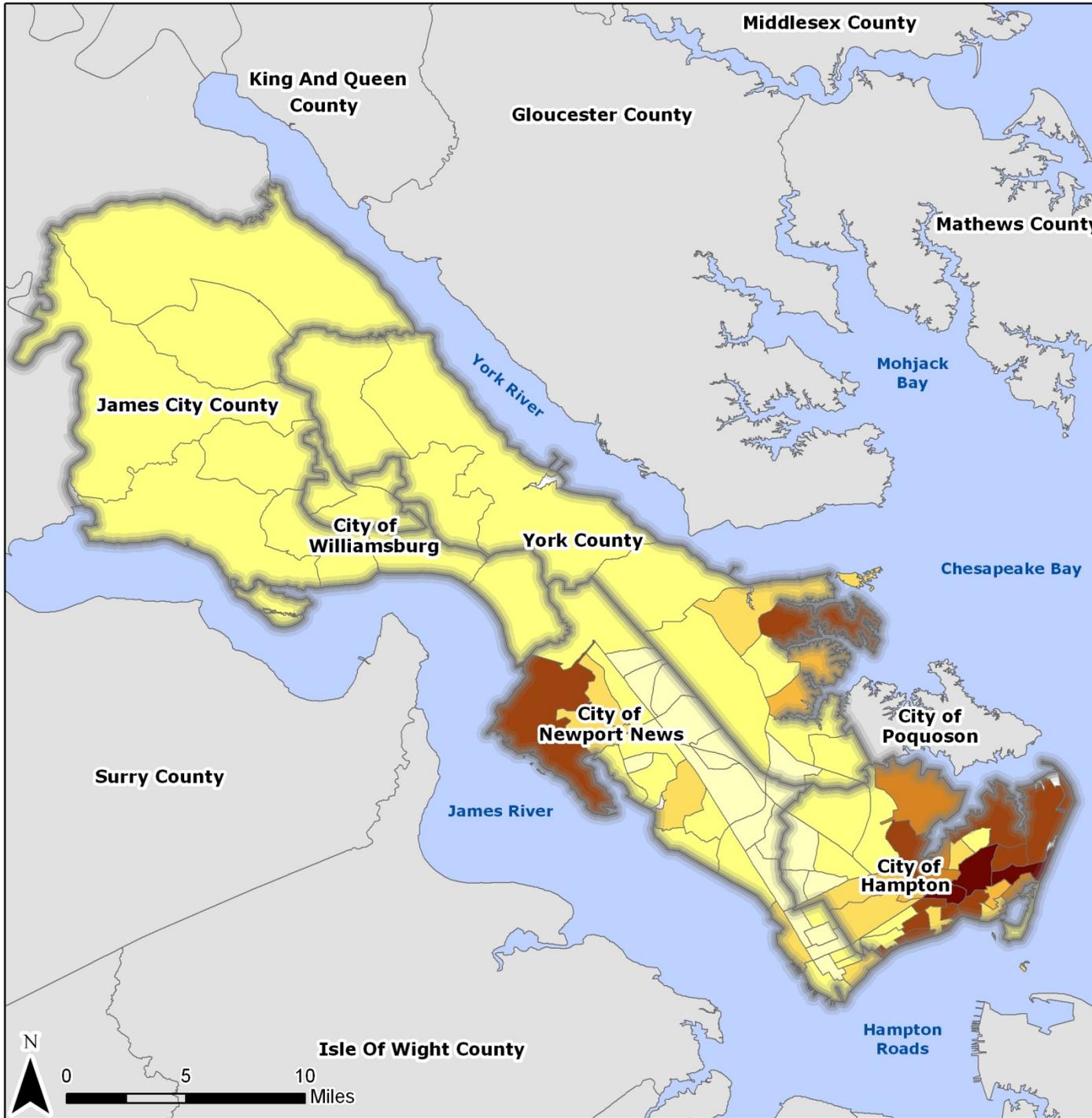
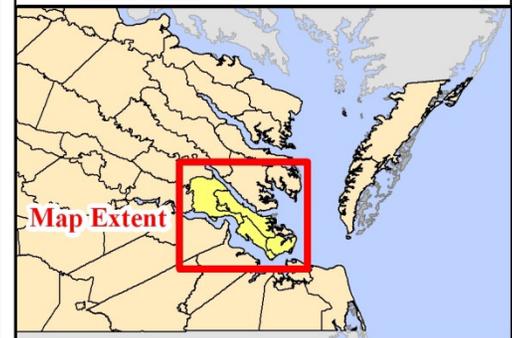
- No Loss Calculated
- < \$20 Million
- \$20 Million - \$50 Million
- \$50 Million - \$75 Million
- \$75 Million - \$100 Million
- \$100 Million - \$150 Million
- > \$150 Million

Map Description:

Total Economic Loss includes: Damage to Structural, Non-Structural Building, Contents, Inventory Loss, Relocation, Income Loss, Rental Loss, and Wage Loss.

Data Sources

Jurisdictional Boundaries (ESRI)
Total Economic Loss 100 Year Flood (2009 HAZUS-MH MR4 runs)



Virginia Peninsula Hazard Mitigation Plan Update

Total Economic Loss 500-Year Flood (HAZUS)

Legend

500 Year Flood Loss by Census Tract

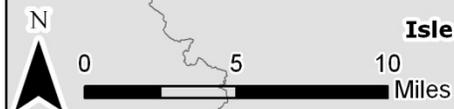
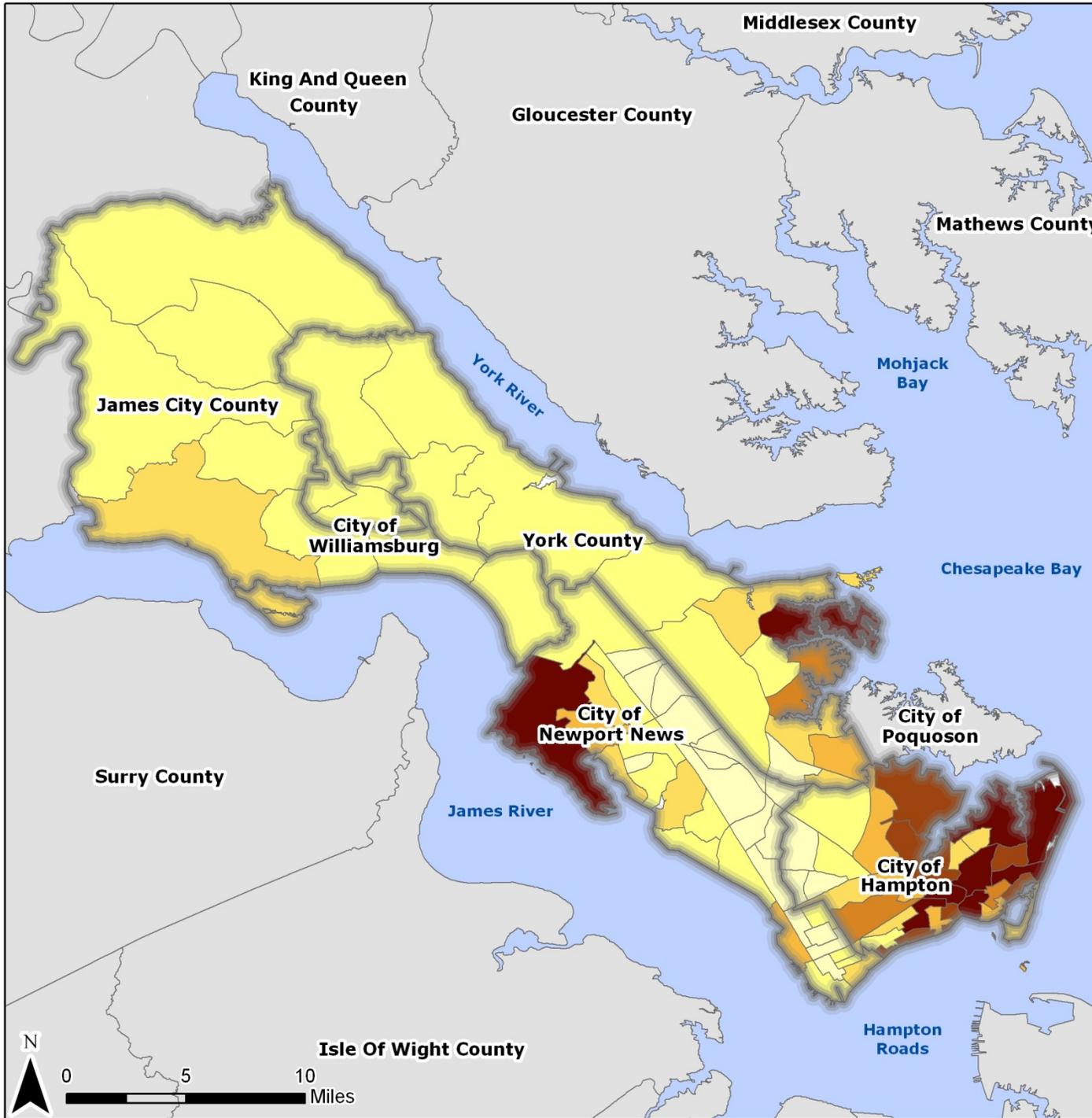
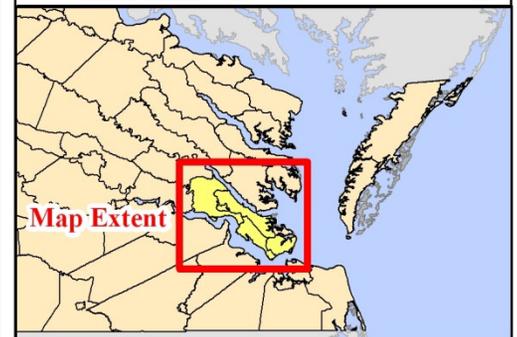
-  No Loss Calculated
-  < \$20 Million
-  \$20 Million - \$50 Million
-  \$50 Million - \$75 Million
-  \$75 Million - \$100 Million
-  \$100 Million - \$150 Million
-  > \$150 Million

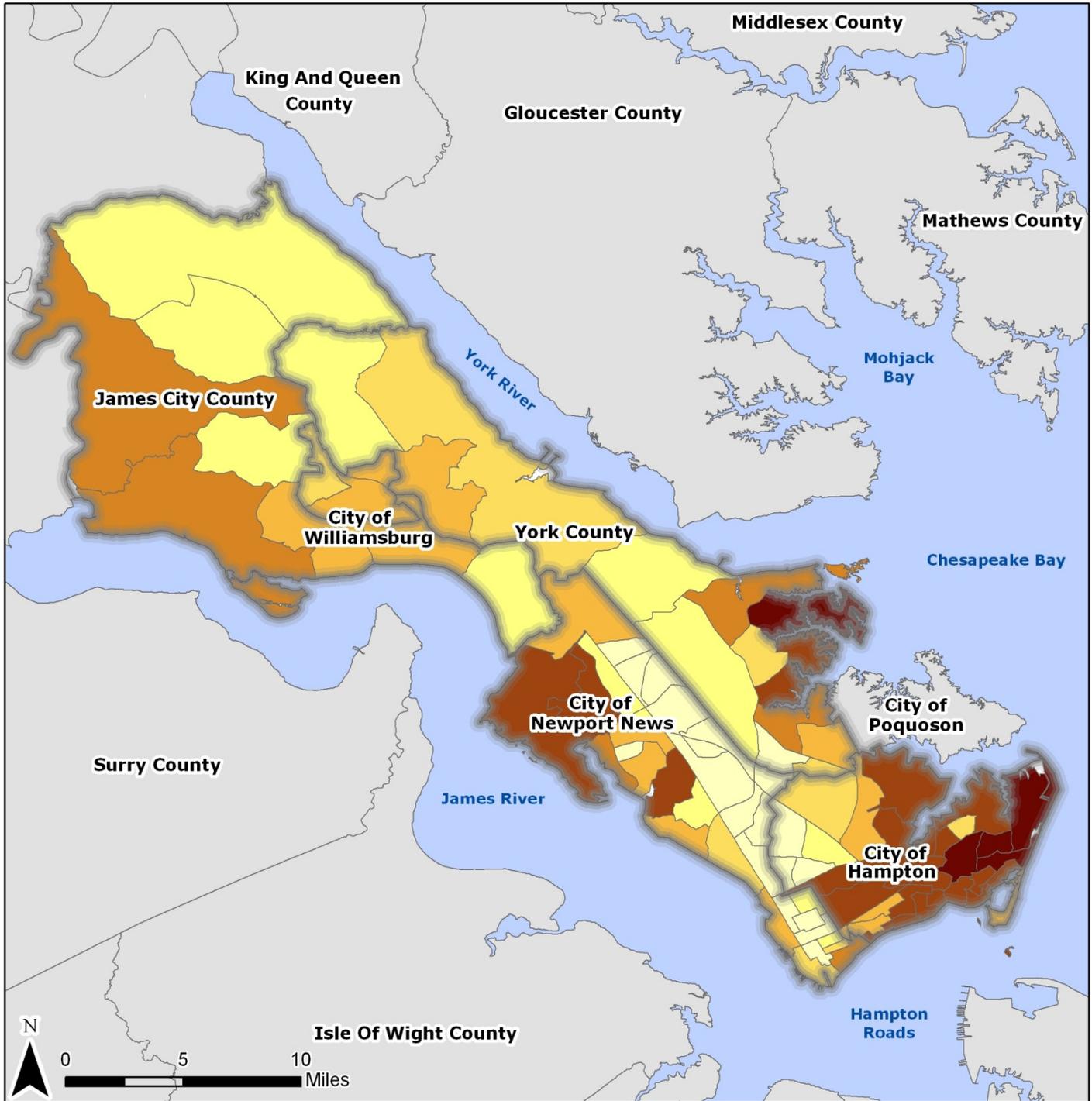
Map Description:

Total Economic Loss includes: Damage to Structural, Non-Structural Building, Contents, Inventory Loss, Relocation, Income Loss, Rental Loss, and Wage Loss.

Data Sources

Jurisdictional Boundaries (ESRI)
Total Economic Loss 500 Year Flood
(2009 HAZUS-MH MR4 runs)





Virginia Peninsula Hazard Mitigation Plan Update

Flood Annualized Residential Loss (HAZUS)

Legend

Annualized Residential Loss by Census Tract

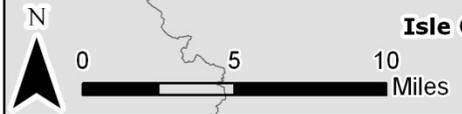
- No Loss Calculated
- < \$50,000
- \$50,000 - \$150,000
- \$150,000 - \$500,000
- \$500,000 - \$1 Million
- \$1 Million - \$5 Million
- > \$5 Million

Map Description:
 Probabilistic Annualized loss was calculated by HAZUS-MH using the probabilistic scenario. Annualized loss is defined as the expected value of loss in any one year, and is developed by aggregating the losses and their exceedance probabilities.

Residential Loss includes: Damage to Structural, Non-Structural Building, Contents, Inventory Loss, Relocation, Income Loss, Rental Loss, and Wage Loss.

Data Sources

Jurisdictional Boundaries (ESRI)
 Residential Annualized Loss (2009 HAZUS-MH MR4 runs)



Virginia Peninsula Hazard Mitigation Plan Update Flood Annualized Total Loss (HAZUS)

Legend

Annualized Total Loss by Census Tract

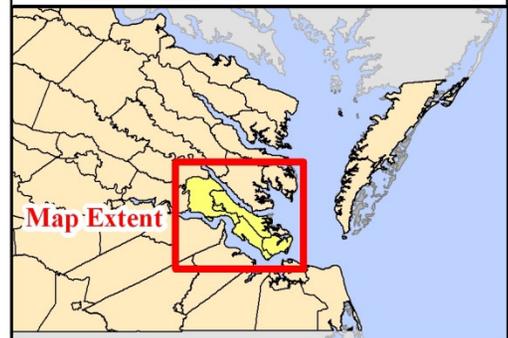
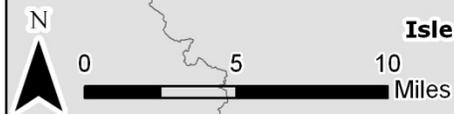
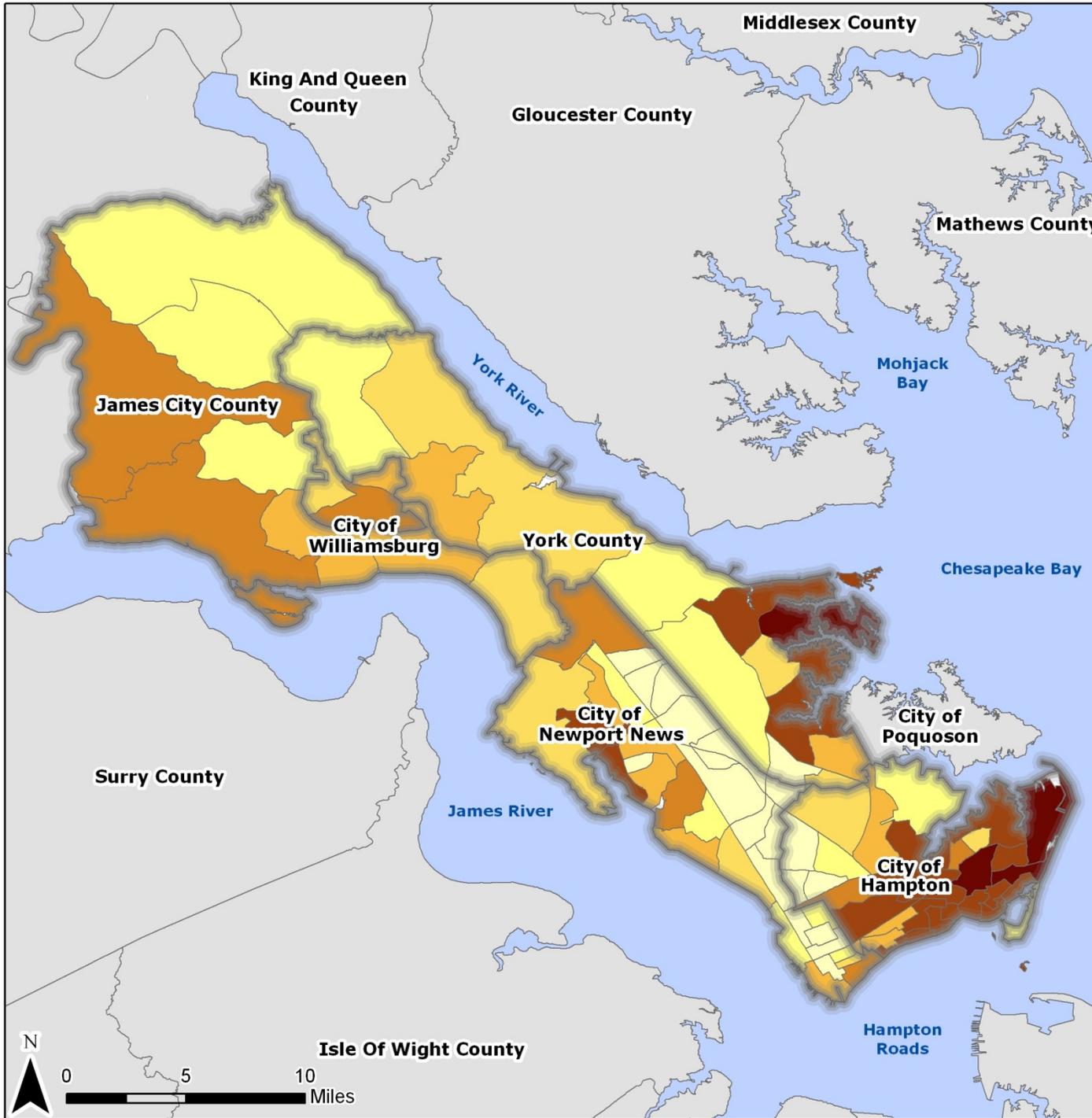


Map Description:
Probabilistic Annualized loss was calculated by HAZUS-MH using the probabilistic scenario. Annualized loss is defined as the expected value of loss in any one year, and is developed by aggregating the losses and their exceedance probabilities.

Total Direct Economic Loss includes: Damage to Structural, Non-Structural Building, Contents, Inventory Loss, Relocation, Income Loss, Rental Loss, and Wage Loss.

Data Sources

Jurisdictional Boundaries (ESRI)
Flood Total Annualized Loss (2009 HAZUS-MH MR4 runs)



Virginia Peninsula Hazard Mitigation Plan Update Earthquake Total Annualized Loss (HAZUS)

Legend

Total Loss by Census Tract

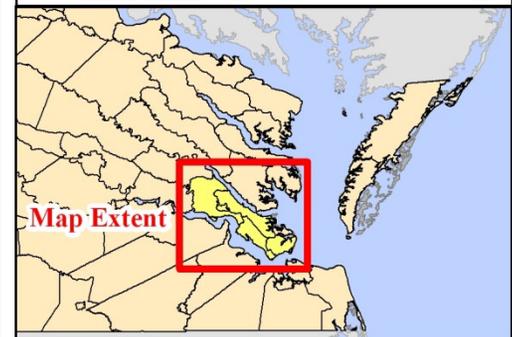
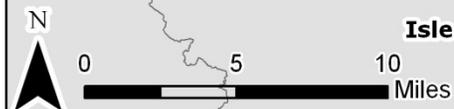
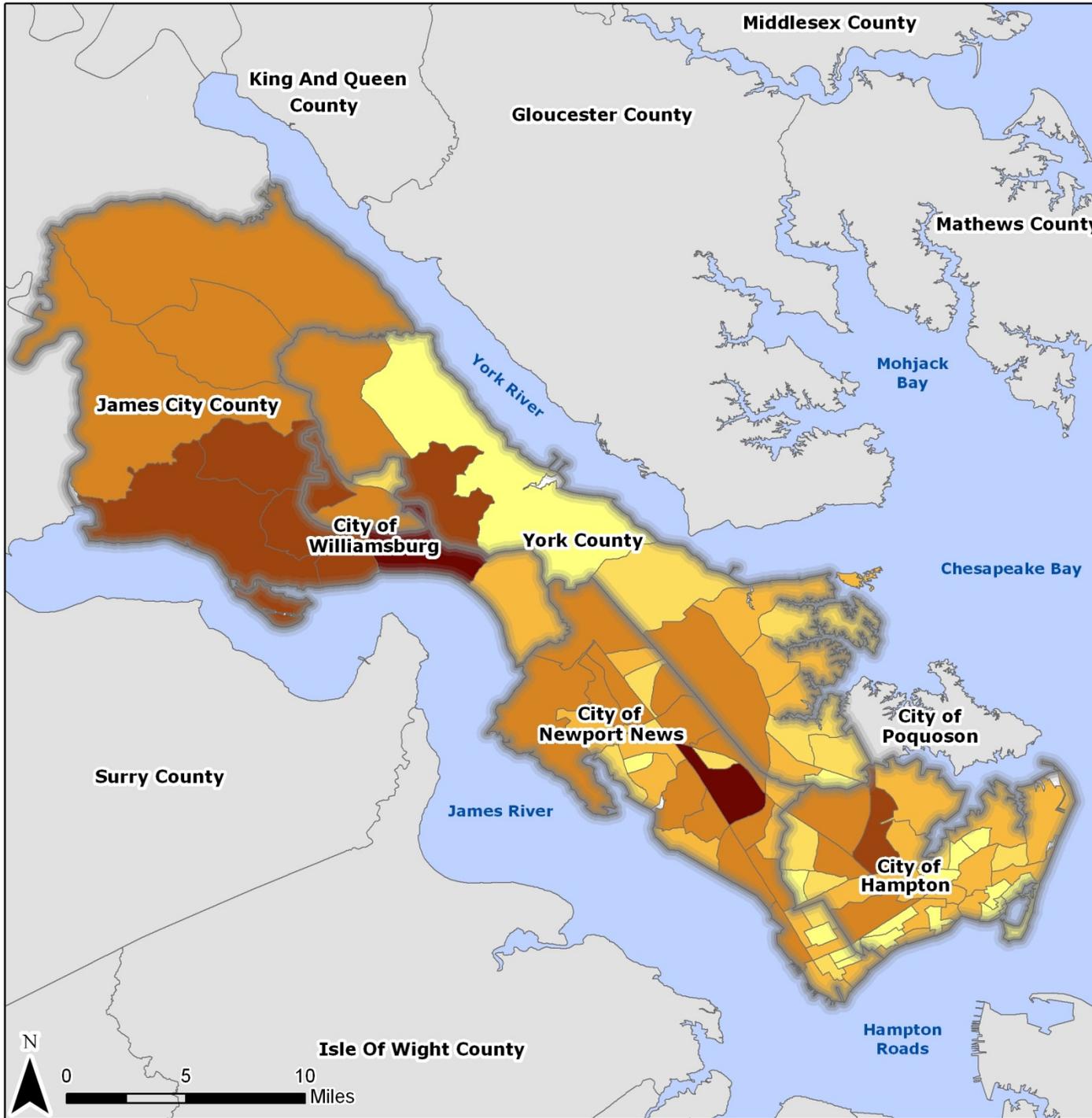


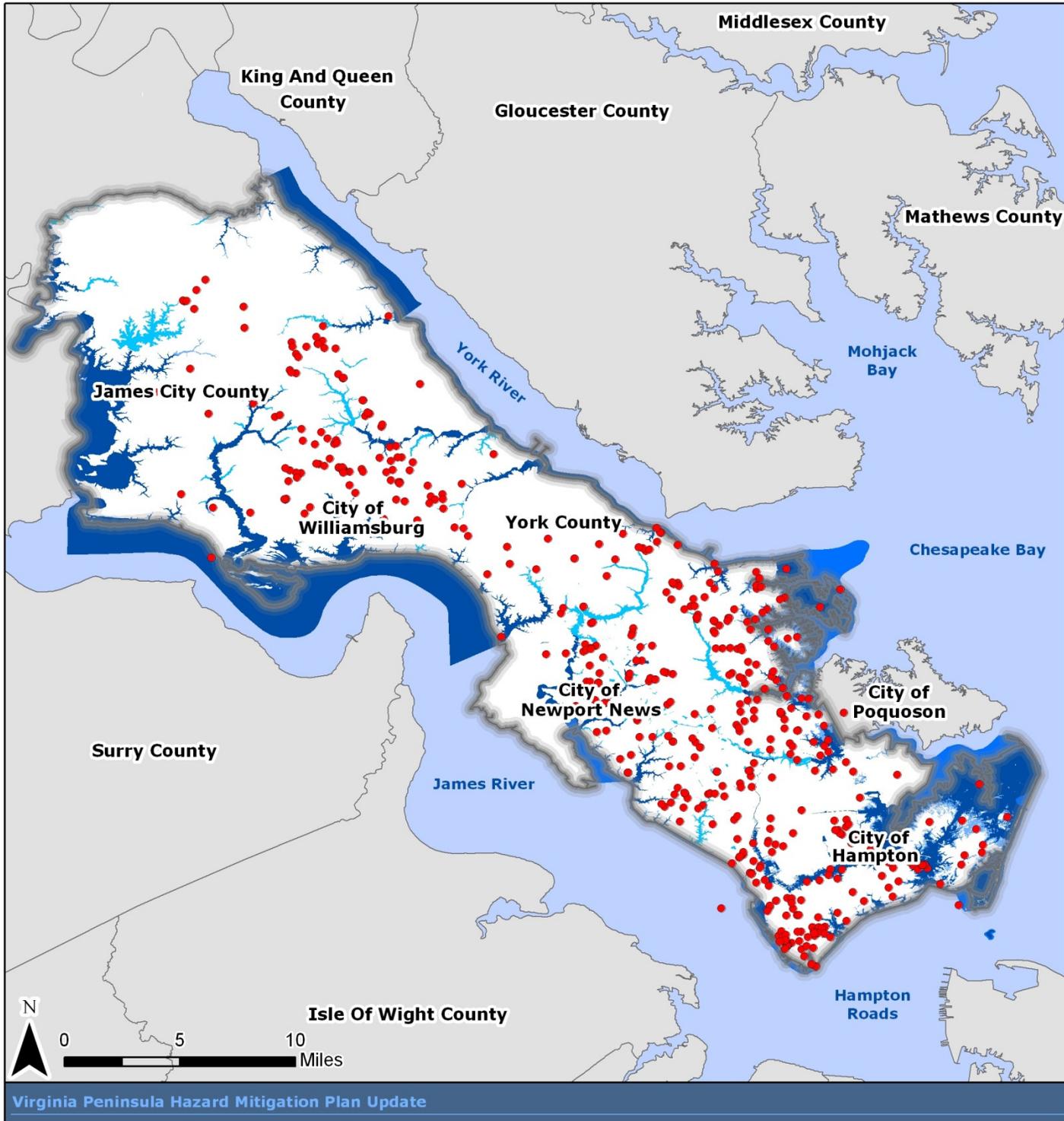
Map Description:
Probabilistic Annualized loss was calculated by HAZUS-MH using the probabilistic scenario. Annualized loss is defined as the expected value of loss in any one year, and is developed by aggregating the losses and their exceedance probabilities.

Total Direct Economic Loss includes: Damage to Structural, Non-Structural Building, Contents, Inventory Loss, Relocation, Income Loss, Rental Loss, and Wage Loss.

Data Sources

Jurisdictional Boundaries (ESRI)
Earthquake Total Annualized Loss (2009 HAZUS-MH MR4 runs)





Virginia Peninsula Hazard Mitigation Plan Update Special Flood Hazard Areas and Critical Facilities

Legend

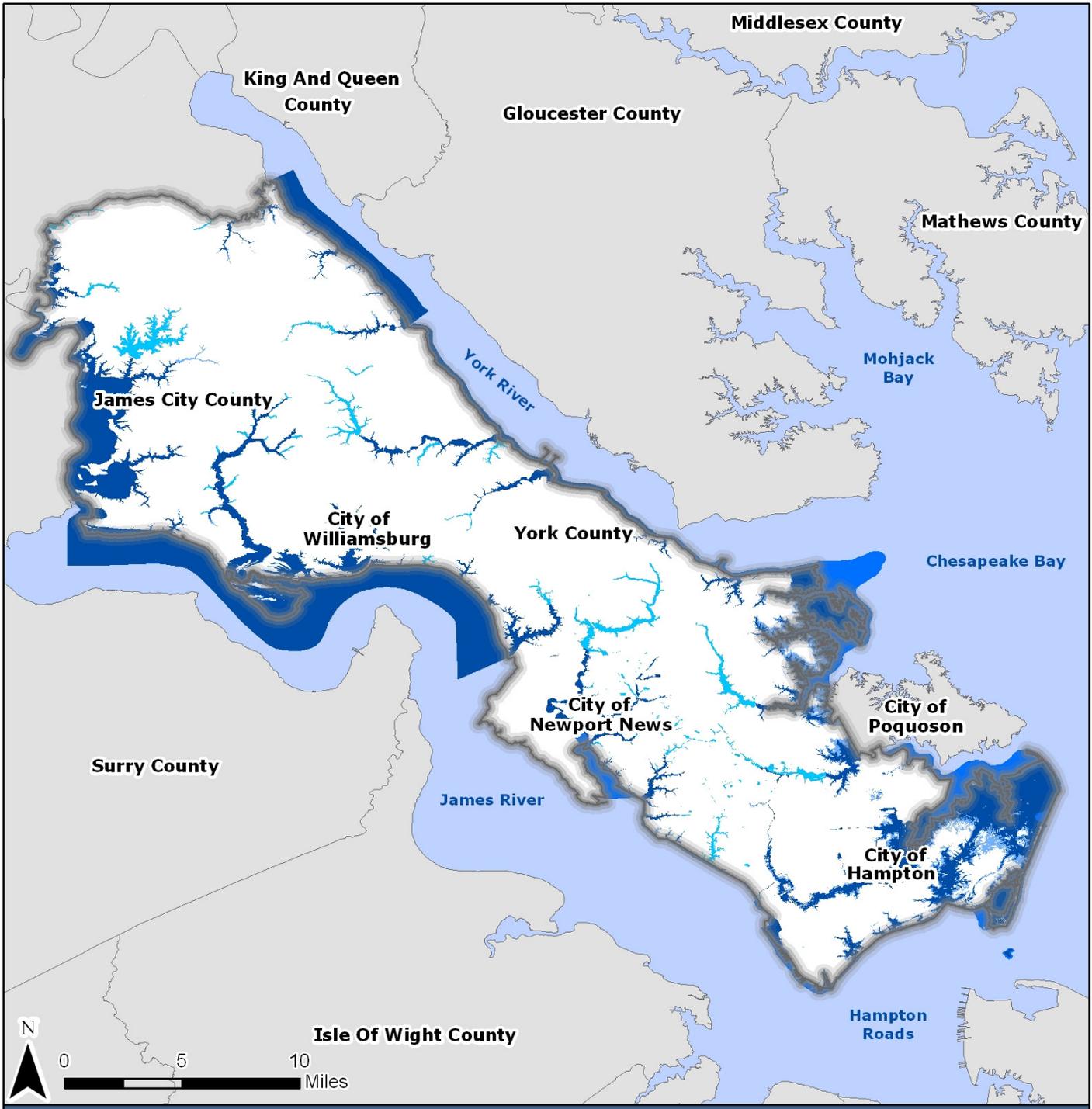
- Critical Facilities
- Jurisdictional Boundaries
- Flood Zone**
- Zone AE
- Zone VE
- Zone A
- 500 Year

Map Description:
Flood zones are geographic areas that the FEMA has defined according to varying levels of flood risk. These zones are depicted on a community's Flood Insurance Rate Map (FIRM) or Flood Hazard Boundary Map. Each zone reflects the severity or type of flooding in the area.

Data Sources

- Jurisdictional Boundaries (ESRI)
- Special Flood Hazard Areas (FEMA)
- City of Hampton Critical Facilities (Hampton GIS)
- James City County Critical Facilities (JCC GIS)
- City of Newport News Critical Facilities (NN GIS)
- City of Williamsburg Critical Facilities (Williamsburg GIS-centroids derived from building footprints, VEDP-public schools)
- York County Critical Facilities (York County GIS)
- Military Installations (HRPDC-centroids derived from polygons)





Virginia Peninsula Hazard Mitigation Plan Update Special Flood Hazard Areas

Legend

-  Jurisdictional Boundaries
- Flood Zone**
-  Zone AE
-  Zone VE
-  Zone A
-  500 Year

Map Description:
 Flood zones are geographic areas that the FEMA has defined according to varying levels of flood risk. These zones are depicted on a community's Flood Insurance Rate Map (FIRM) or Flood Hazard Boundary Map. Each zone reflects the severity or type of flooding in the area.

Data Sources

Jurisdictional Boundaries (ESRI)
 Special Flood Hazard Areas (FEMA)



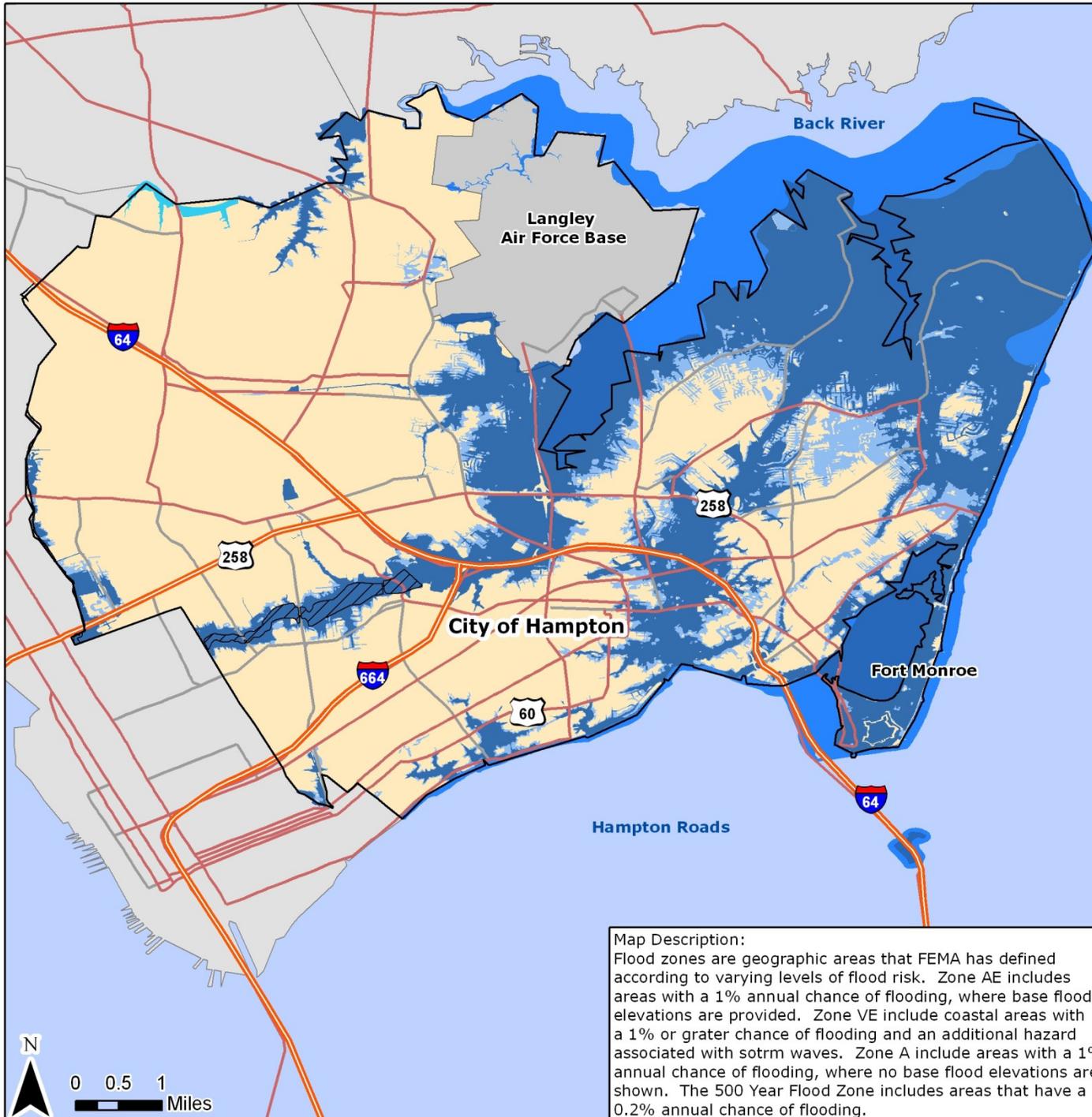
Virginia Peninsula Hazard Mitigation Plan Update Special Flood Hazard Areas

Legend

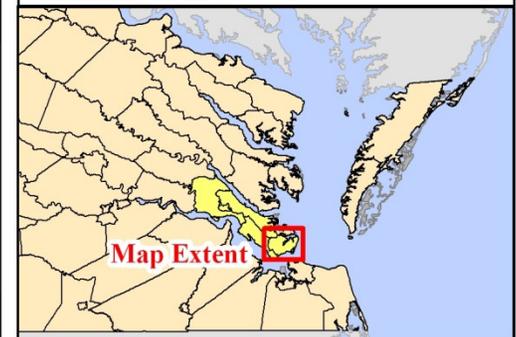
-  City of Hampton Boundary
-  Interstate
-  Highways
-  Major Roads
- Flood Zone**
-  Zone AE
-  Zone VE
-  Zone A
-  500 Year
-  Floodway

Data Sources

Interstate, Highways, Major Roads,
Jurisdictional Boundaries (ESRI)
Special Flood Hazard Areas (FEMA)
Military Installations (HRPDC)



Map Description:
Flood zones are geographic areas that FEMA has defined according to varying levels of flood risk. Zone AE includes areas with a 1% annual chance of flooding, where base flood elevations are provided. Zone VE include coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. Zone A include areas with a 1% annual chance of flooding, where no base flood elevations are shown. The 500 Year Flood Zone includes areas that have a 0.2% annual chance of flooding.



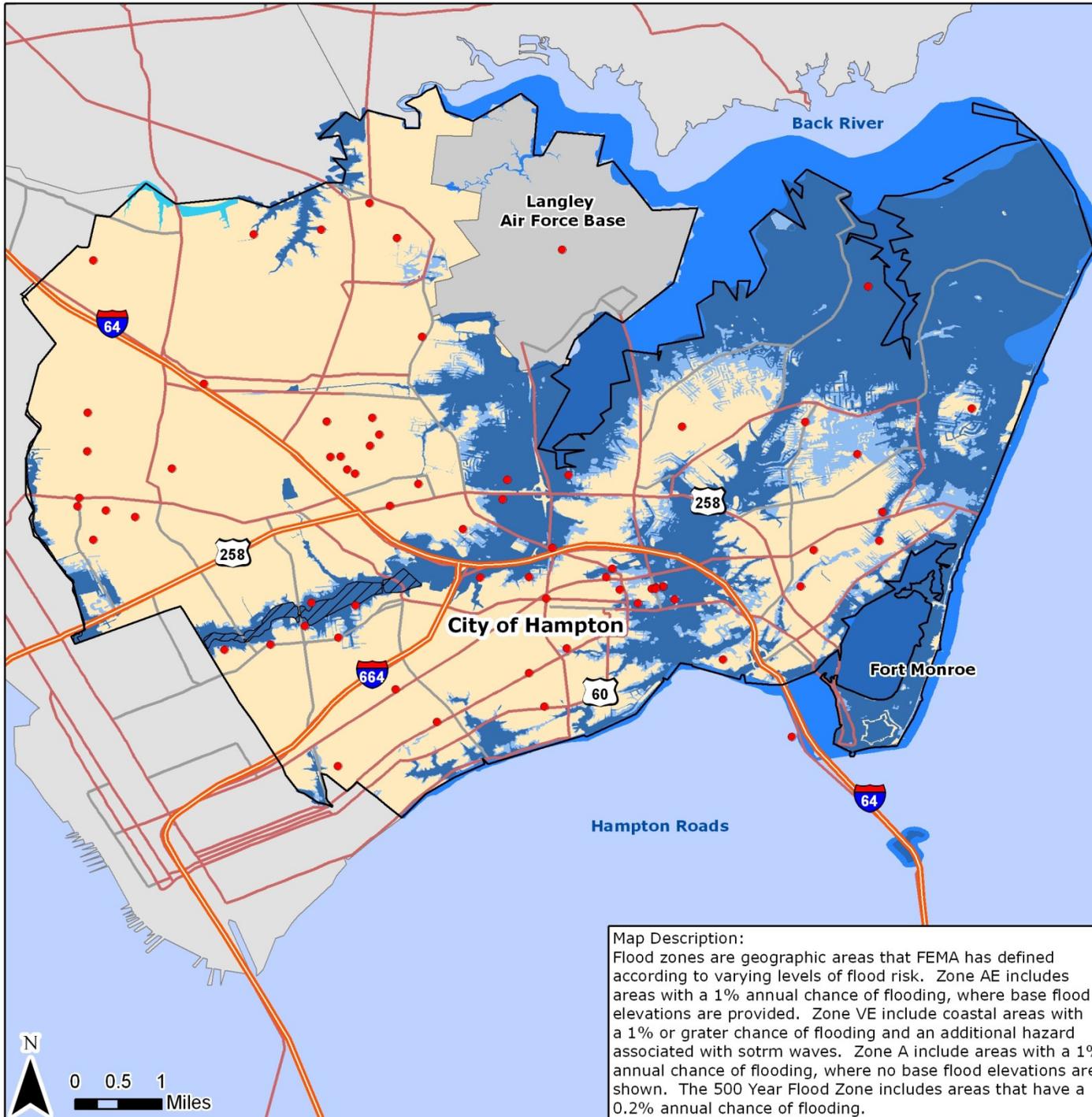
City of Hampton Special Flood Hazard Areas and Critical Facilities

Legend

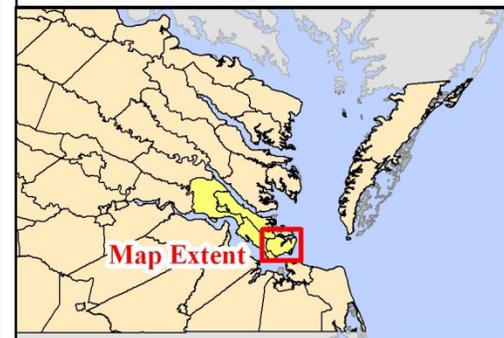
- Critical Facilities
 - City of Hampton Boundary
 - Interstate
 - Highways
 - Major Roads
- Flood Zone**
- Zone AE
 - Zone VE
 - Zone A
 - 500 Year
 - Floodway

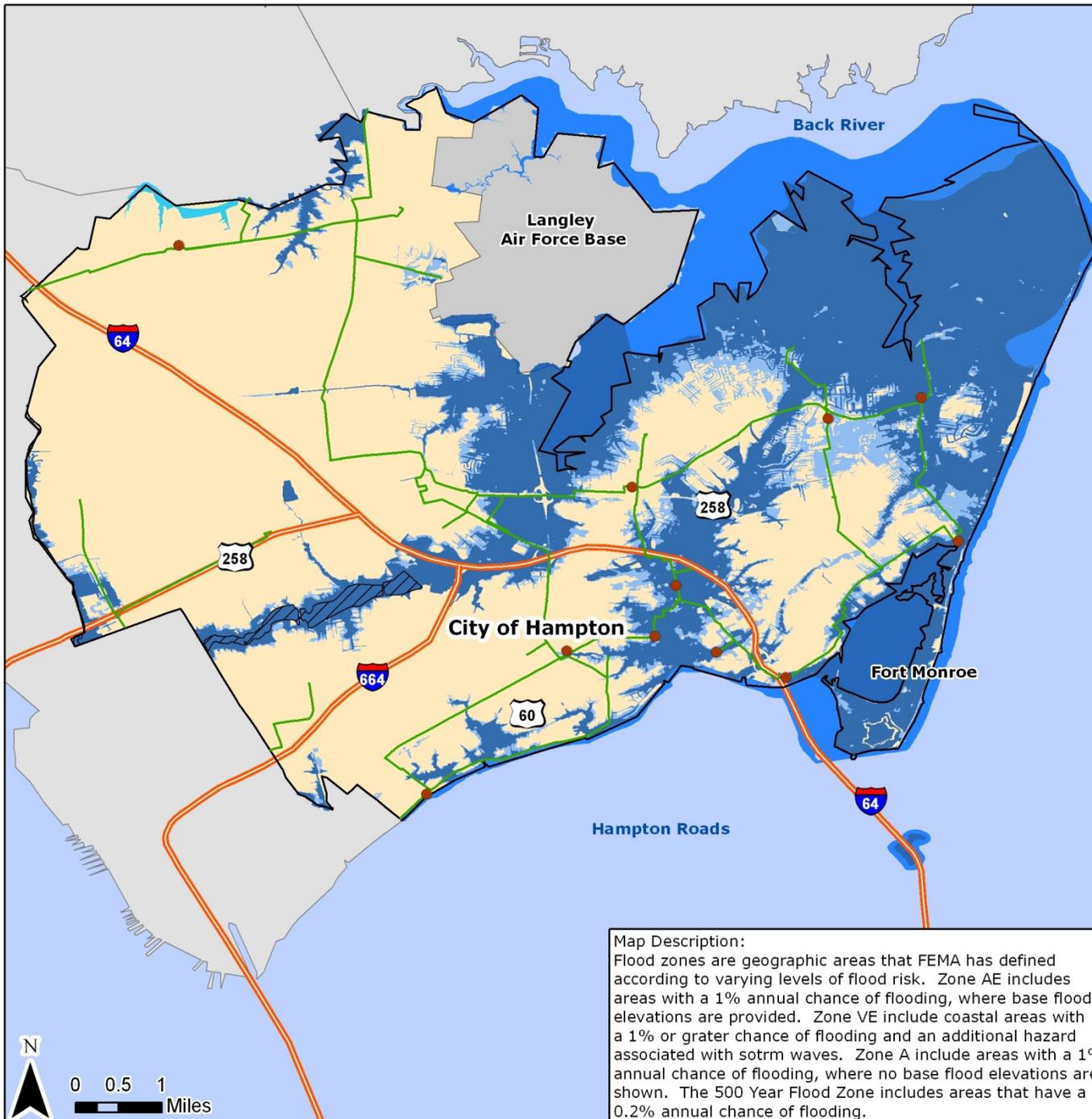
Data Sources

Interstate, Highways, Major Roads,
 Jurisdictional Boundaries (ESRI)
 Special Flood Hazard Areas (FEMA)
 Critical Facilities (Hampton GIS)
 Military Installations (HRPDC)



Map Description:
 Flood zones are geographic areas that FEMA has defined according to varying levels of flood risk. Zone AE includes areas with a 1% annual chance of flooding, where base flood elevations are provided. Zone VE include coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. Zone A include areas with a 1% annual chance of flooding, where no base flood elevations are shown. The 500 Year Flood Zone includes areas that have a 0.2% annual chance of flooding.





City of Hampton Hampton Roads Sanitation District Facilities and Special Flood Hazard Areas

Legend

- HRSD Pump Station
- HRSD Interceptor
- Interstate
- City of Hampton Boundary

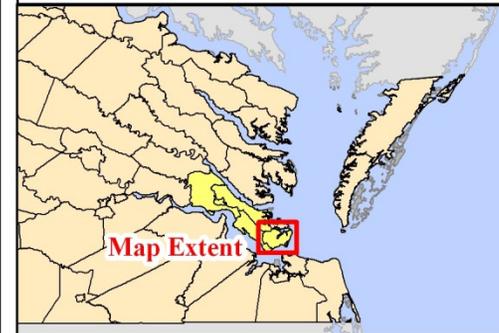
Flood Zone

- Zone AE
- Zone VE
- Zone A
- 500 Year
- Floodway

Data Sources

- Interstate, Jurisdictional Boundaries (ESRI)
- Special Flood Hazard Areas (FEMA)
- Military Installations (HRPDC)
- HRSD Pump Stations and Interceptors (HRSD)

Map Description:
 Flood zones are geographic areas that FEMA has defined according to varying levels of flood risk. Zone AE includes areas with a 1% annual chance of flooding, where base flood elevations are provided. Zone VE include coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. Zone A include areas with a 1% annual chance of flooding, where no base flood elevations are shown. The 500 Year Flood Zone includes areas that have a 0.2% annual chance of flooding.



Virginia Peninsula Hazard Mitigation Plan Update

Severe Repetitive Loss and Repetitive Loss Properties

Legend

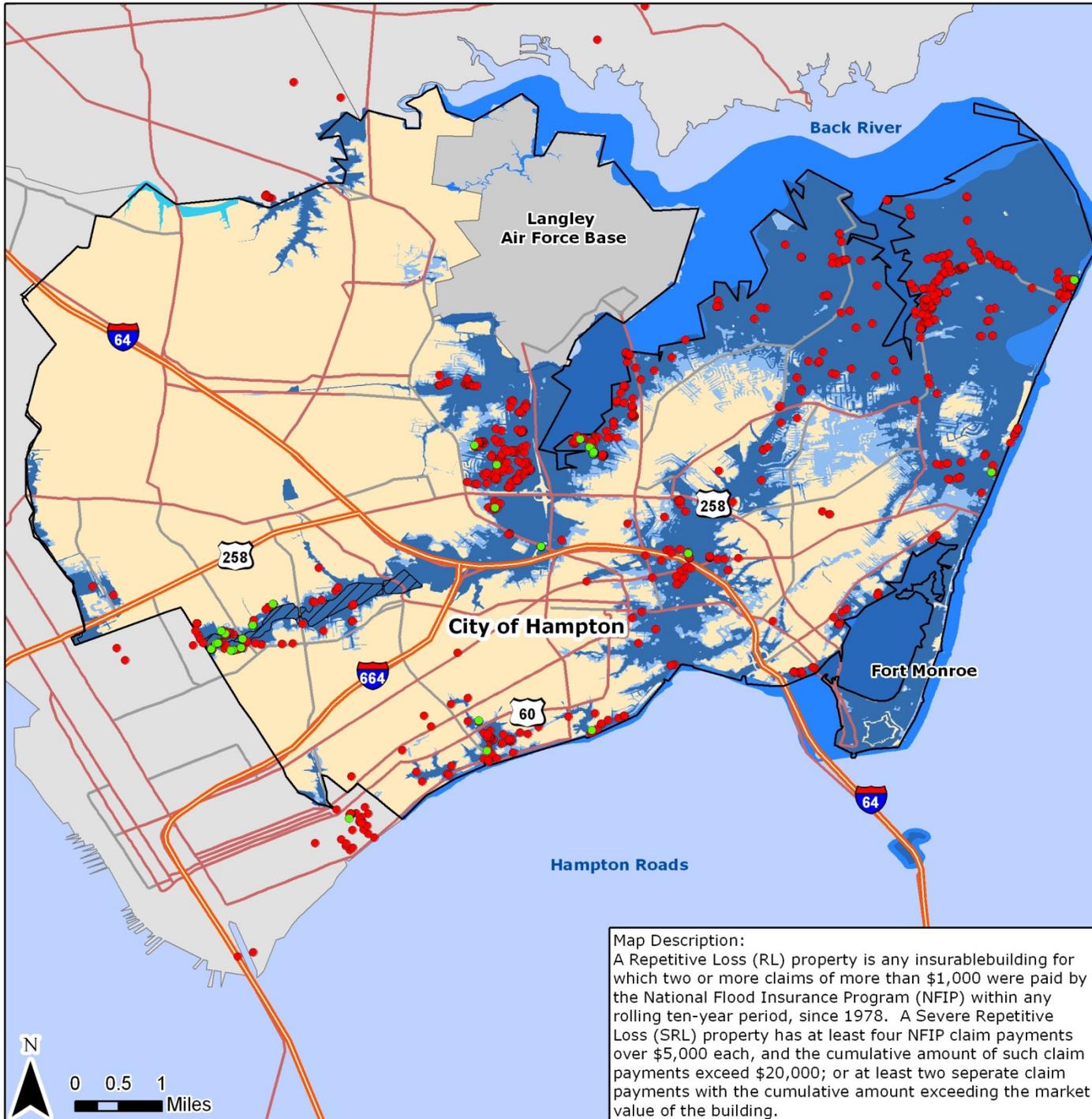
- Severe Repetitive Loss Properties
 - Repetitive Loss Properties
 - City of Hampton Boundary
 - Interstate
 - Highways
 - Major Roads
- Flood Zone**
- Zone AE
 - Zone VE
 - Zone A
 - 500 Year
 - Floodway

Data Sources

Interstate, Highways, Major Roads, Jurisdictional Boundaries (ESRI)
 Special Flood Hazard Areas (FEMA)
 RL and SRL Properties (VDEM via FEMA, As of 10/1/2010)
 Military Installations (HRPDC)

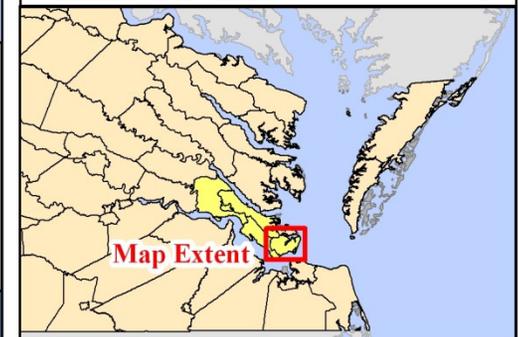


Dewberry



Map Description:

A Repetitive Loss (RL) property is any insurable building for which two or more claims of more than \$1,000 were paid by the National Flood Insurance Program (NFIP) within any rolling ten-year period, since 1978. A Severe Repetitive Loss (SRL) property has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claim payments exceed \$20,000; or at least two separate claim payments with the cumulative amount exceeding the market value of the building.



City of Hampton Storm Surge Inundation and Critical Facilities

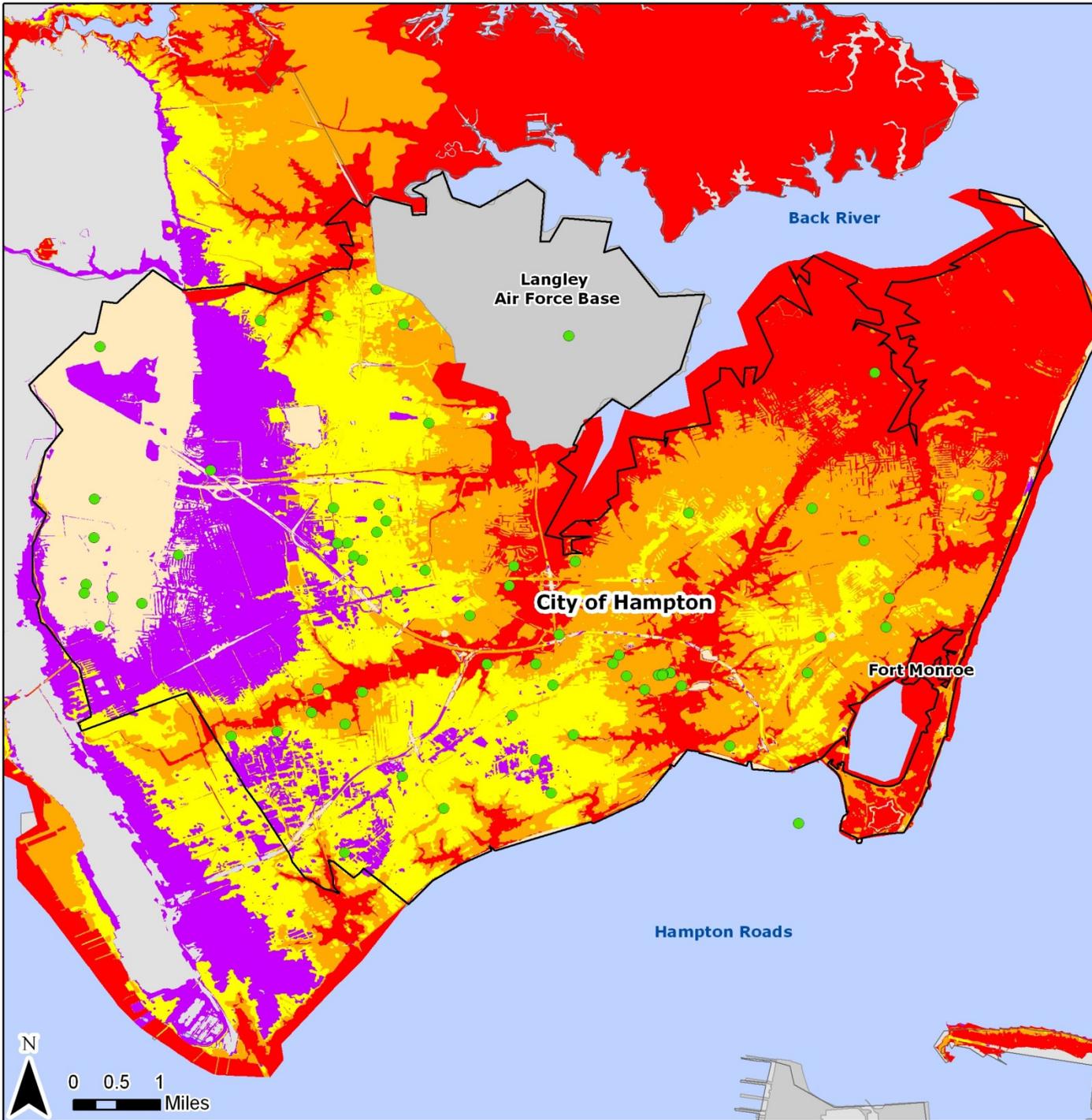
Legend

- Critical Facilities
- City of Hampton Boundary
- Storm Surge**
- Category 1
- Category 2
- Category 3
- Category 4
- Area Not Studied

Map Description:
The map shows projected hurricane storm surge flooding along coastal areas. The data comes from the Virginia Hurricane Evacuation Study, a joint effort by VDEM, FEMA, USACE, and coastal localities.

Data Sources

- Jurisdictional Boundaries (ESRI)
- Storm Surge Inundation (VDEM)
- Critical Facilities (Hampton GIS)
- Military Installations (HRPDC)



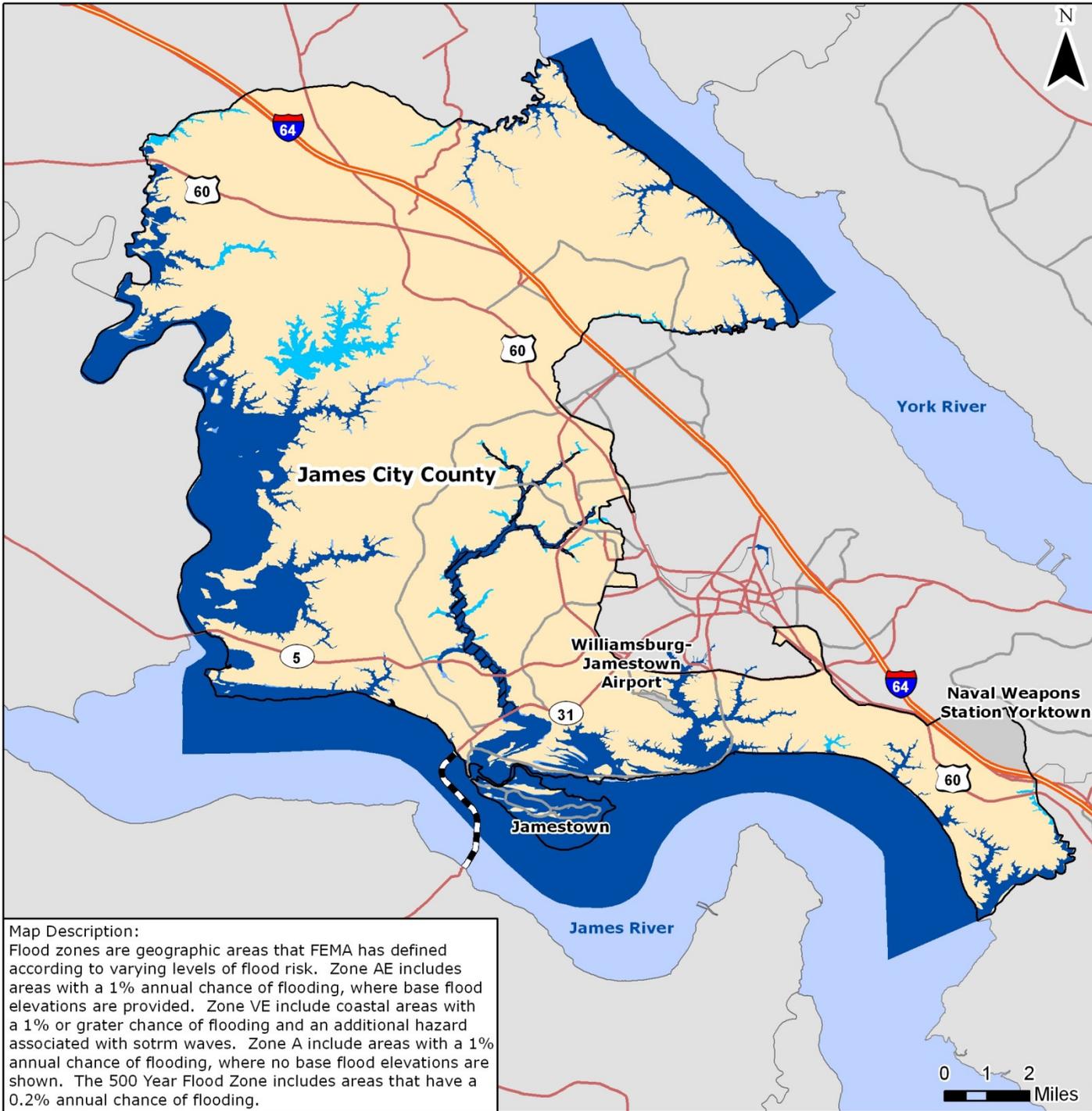
Virginia Peninsula Hazard Mitigation Plan Update Special Flood Hazard Areas

Legend

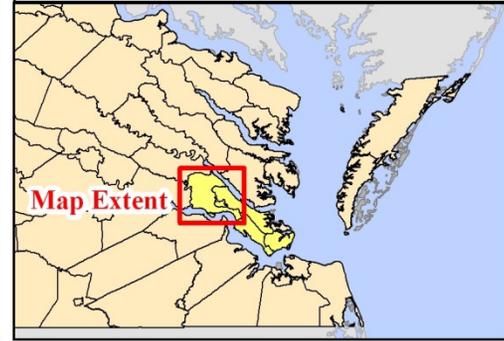
-  James City County Boundary
-  Interstate
-  Highways
-  Major Roads
-  Jamestown -Scotland Ferry
- Flood Zone**
-  Zone AE
-  Zone A
-  500 Year
-  Floodway

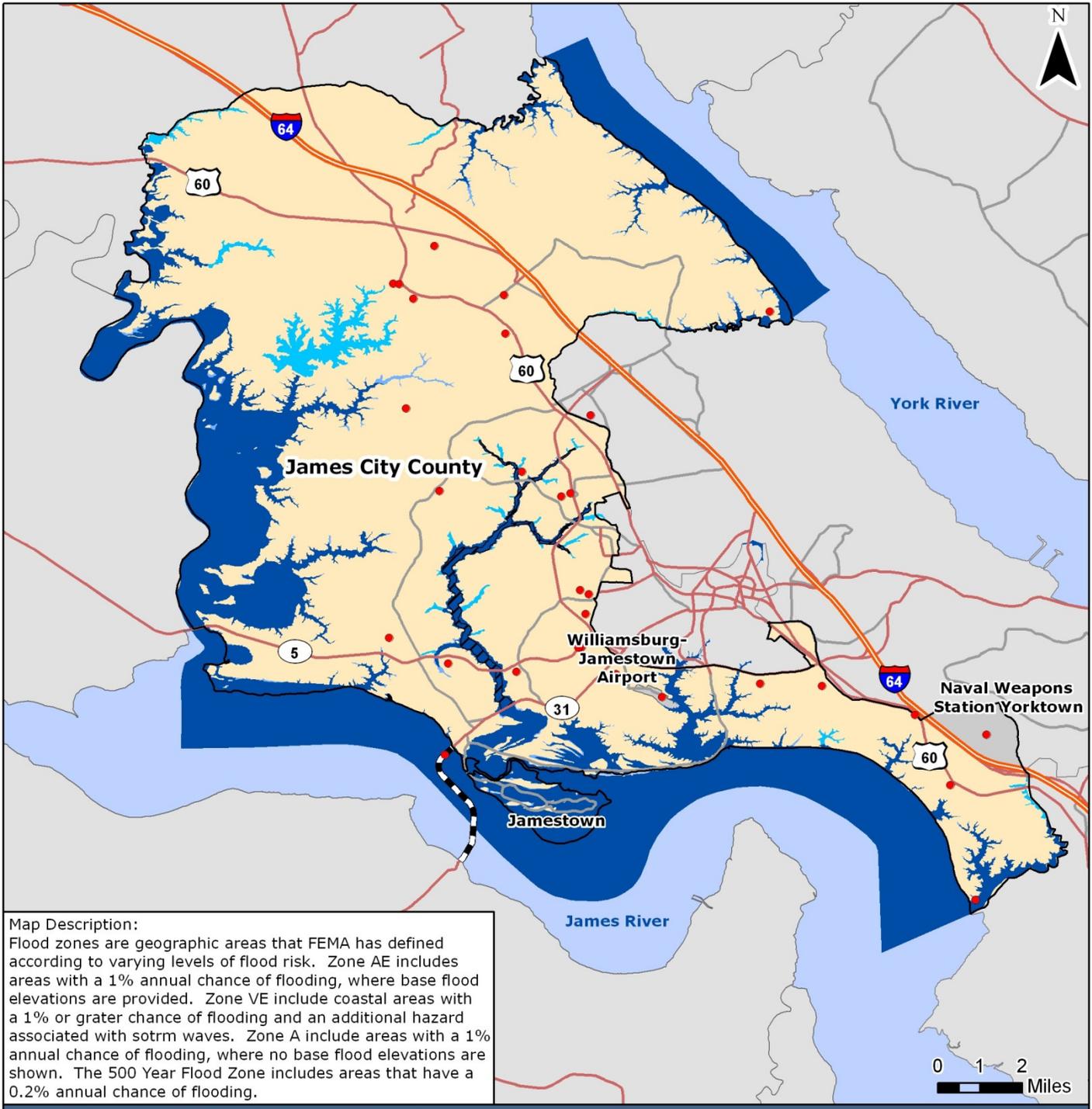
Data Sources

Interstate, Highways, Major Roads, Ferry
 Jurisdictional Boundaries (ESRI)
 Special Flood Hazard Areas (FEMA)
 Military Installations (HRPDC)
 Airport (JCC GIS)



Map Description:
 Flood zones are geographic areas that FEMA has defined according to varying levels of flood risk. Zone AE includes areas with a 1% annual chance of flooding, where base flood elevations are provided. Zone VE include coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. Zone A include areas with a 1% annual chance of flooding, where no base flood elevations are shown. The 500 Year Flood Zone includes areas that have a 0.2% annual chance of flooding.





James City County Special Flood Hazard Areas and Critical Facilities

Legend

- Critical Facilities
- James City County Boundary
- Interstate
- Highways
- Major Roads
- ▬ Jamestown -Scotland Ferry

Flood Zone

- Zone AE
- Zone A
- 500 Year
- ▨ Floodway

Data Sources

Interstate, Highways, Major Roads, Ferry
 Jurisdictional Boundaries (ESRI)
 Special Flood Hazard Areas (FEMA)
 Critical Facilities (JCC GIS)
 Military Installations (HRPDC)
 Airport (JCC GIS)

HAMPTON ROADS PLANNING DISTRICT COMMISSION **Dewberry**

Map Description:
 Flood zones are geographic areas that FEMA has defined according to varying levels of flood risk. Zone AE includes areas with a 1% annual chance of flooding, where base flood elevations are provided. Zone VE include coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. Zone A include areas with a 1% annual chance of flooding, where no base flood elevations are shown. The 500 Year Flood Zone includes areas that have a 0.2% annual chance of flooding.





James City County Hampton Roads Sanitation District Facilities and Special Flood Hazard Areas

Legend

- HRSD Treatment Plant
 - HRSD Pump Station
 - HRSD Interceptor
 - Interstate
 - James City County Boundary
- ### Flood Zone
- Zone AE
 - Zone A
 - 500 Year
 - Floodway

Data Sources

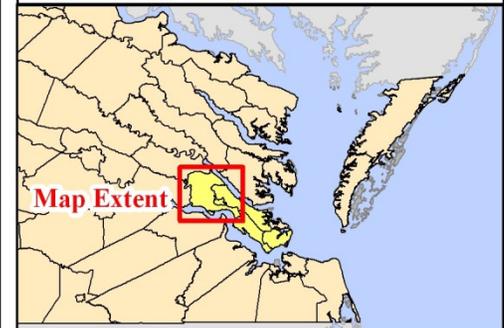
Interstate, Jurisdictional Boundaries (ESRI)
 Special Flood Hazard Areas (FEMA)
 Military Installations (HRPDC)
 Airport (JCC GIS)
 HRSD Treatment Plant, Pump Stations
 and Interceptors (HRSD)

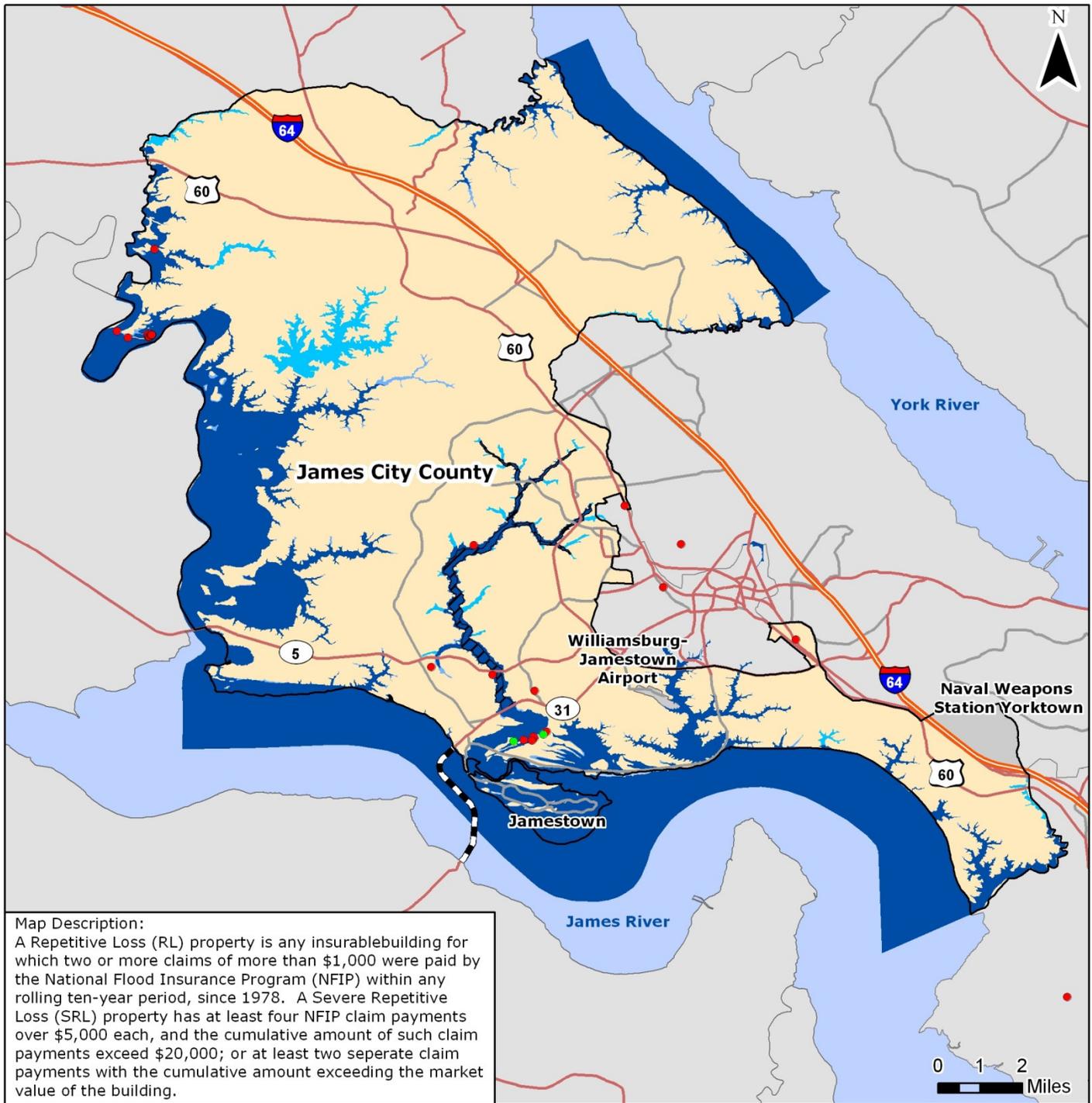


Dewberry

Map Description:

Flood zones are geographic areas that FEMA has defined according to varying levels of flood risk. Zone AE includes areas with a 1% annual chance of flooding, where base flood elevations are provided. Zone VE include coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. Zone A include areas with a 1% annual chance of flooding, where no base flood elevations are shown. The 500 Year Flood Zone includes areas that have a 0.2% annual chance of flooding.





Virginia Peninsula Hazard Mitigation Plan Update

Severe Repetitive Loss and Repetitive Loss Properties

Legend

- Severe Repetitive Loss Properties
- Repetitive Loss Properties
- James City County Boundary
- Interstate
- Highways
- Major Roads
- Jamestown -Scotland Ferry

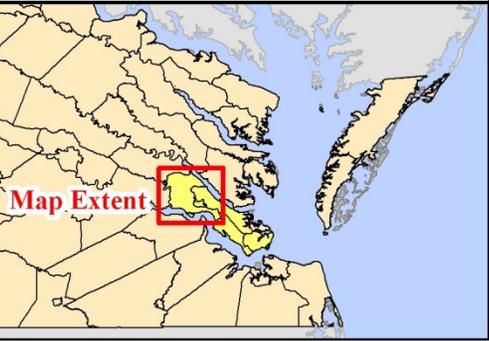
Flood Zone

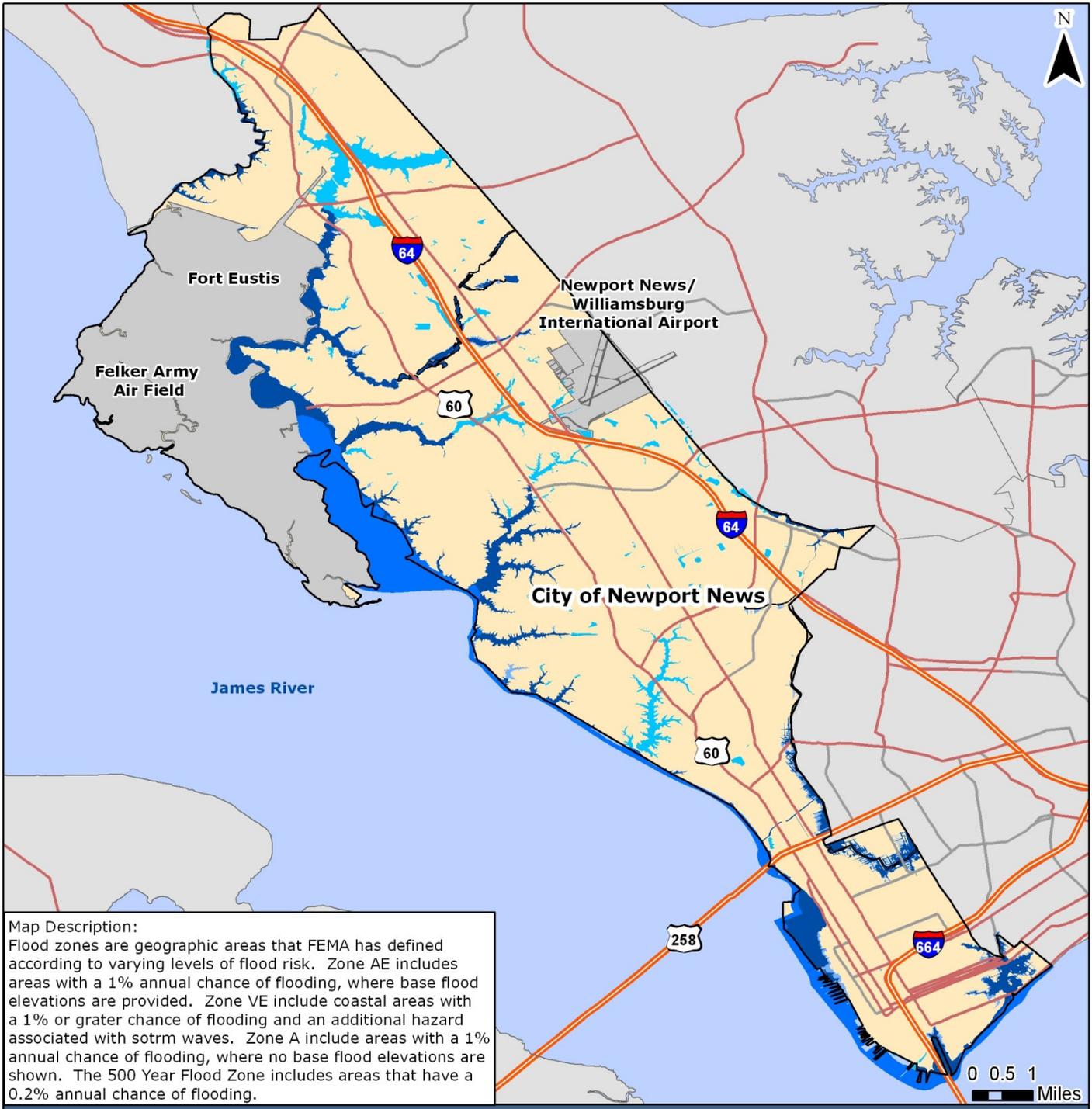
- Zone AE
- Zone A
- 500 Year
- Floodway

Data Sources

Interstate, Highways, Major Roads, Ferry
 Jurisdictional Boundaries (ESRI)
 Special Flood Hazard Areas (FEMA)
 RL and SRL Properties (VDEM via FEMA, As of 10/1/2010)
 Military Installations (HRPDC)
 Airport (JCC GIS)

Map Description:
 A Repetitive Loss (RL) property is any insurable building for which two or more claims of more than \$1,000 were paid by the National Flood Insurance Program (NFIP) within any rolling ten-year period, since 1978. A Severe Repetitive Loss (SRL) property has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claim payments exceed \$20,000; or at least two separate claim payments with the cumulative amount exceeding the market value of the building.





Map Description:
 Flood zones are geographic areas that FEMA has defined according to varying levels of flood risk. Zone AE includes areas with a 1% annual chance of flooding, where base flood elevations are provided. Zone VE include coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. Zone A include areas with a 1% annual chance of flooding, where no base flood elevations are shown. The 500 Year Flood Zone includes areas that have a 0.2% annual chance of flooding.

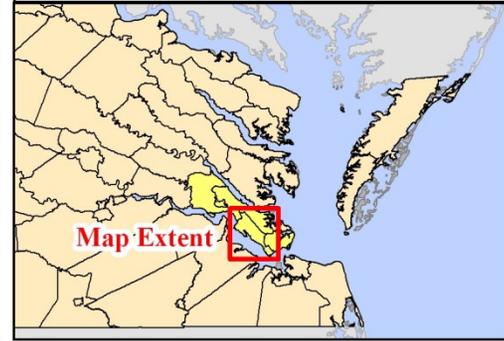
Virginia Peninsula Hazard Mitigation Plan Update Special Flood Hazard Areas

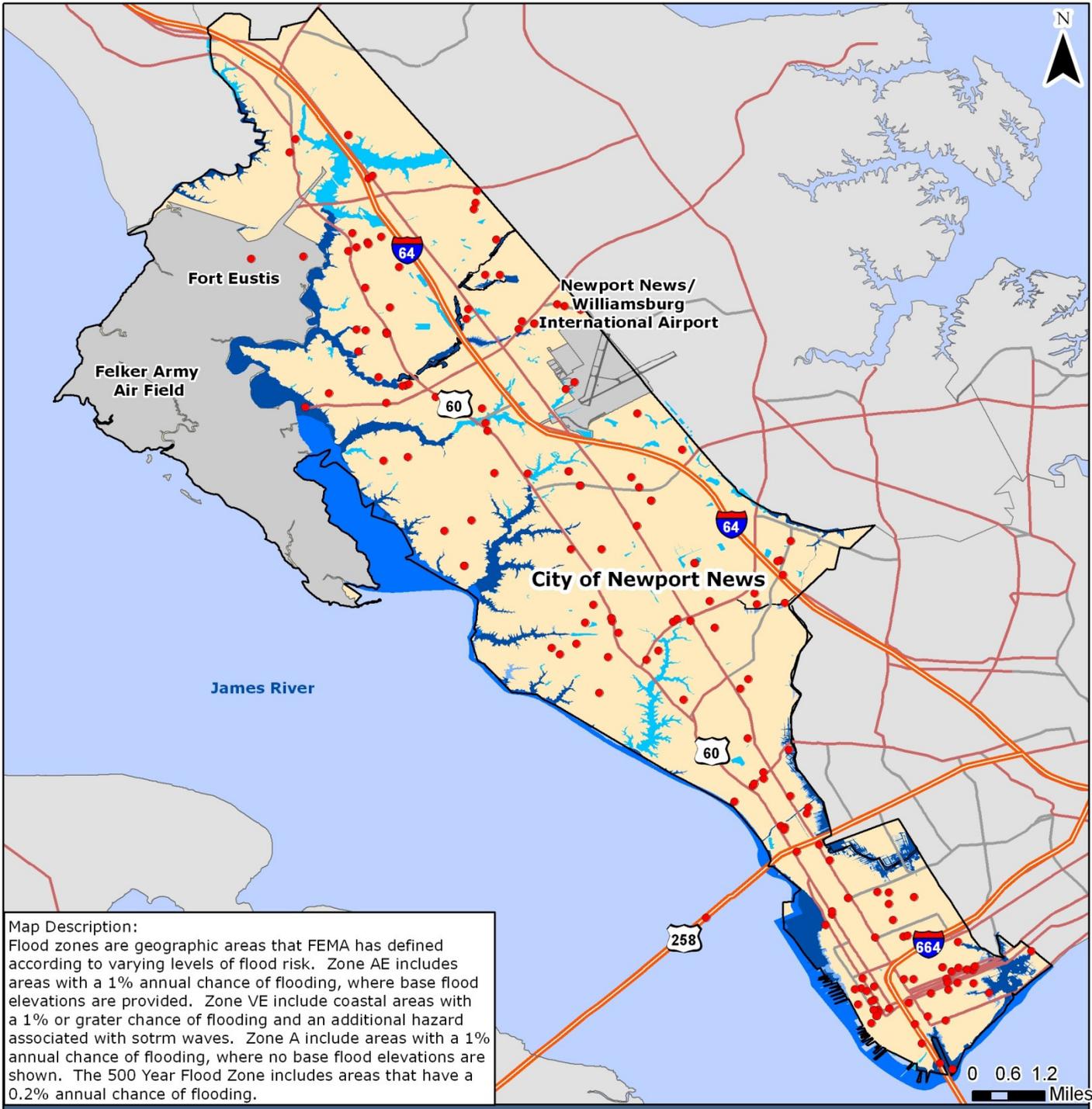
Legend

- City of Newport News Boundary
- Interstate
- Highways
- Major Roads
- Flood Zone**
- Zone AE
- Zone VE
- Zone A
- 500 Year
- Floodway

Data Sources

Interstate, Highways, Major Roads,
 Jurisdictional Boundaries (ESRI)
 Special Flood Hazard Areas (FEMA)
 Military Installations (HRPDC)
 Airport (Newport News GIS)





City of Newport News Special Flood Hazard Areas and Critical Facilities

Legend

- Critical Facilities
- City of Newport News Boundary
- Interstate
- Highways
- Major Roads

Flood Zone

- Zone AE
- Zone VE
- Zone A
- 500 Year
- Floodway

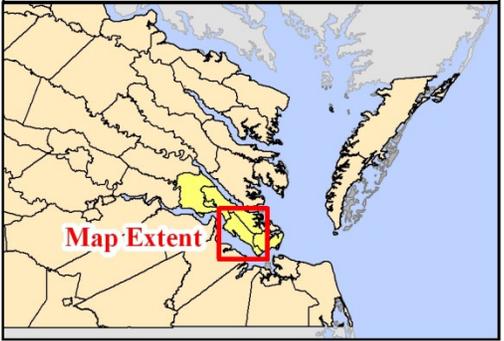
Data Sources

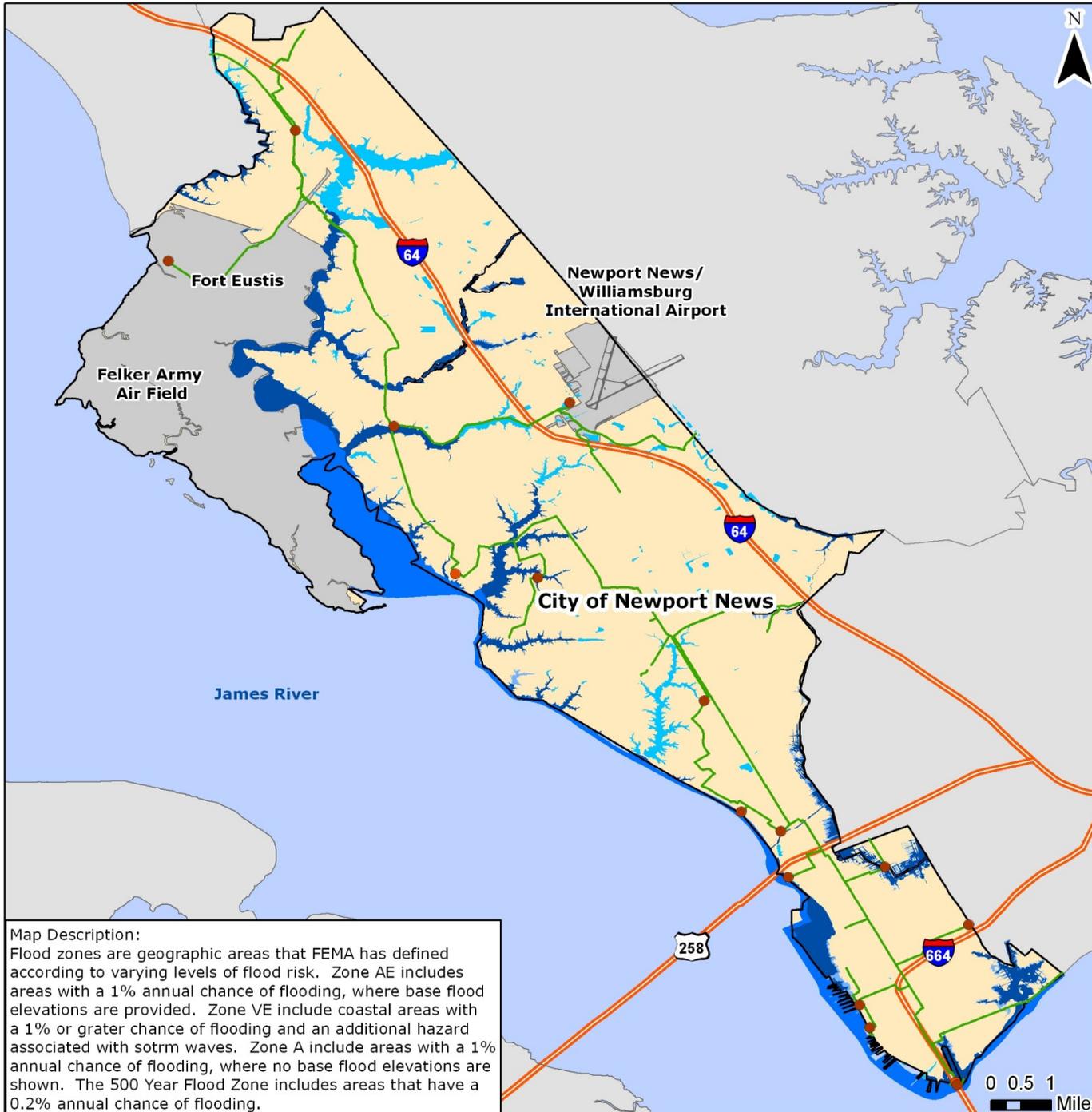
Interstate, Highways, Major Roads,
Jurisdictional Boundaries (ESRI)
Special Flood Hazard Areas (FEMA)
Critical Facilities (Newport News GIS)
Military Installations (HRPDC)
Airport (Newport News GIS)

HAMPTON ROADS
PLANNING DISTRICT COMMISSION

Dewberry

Map Description:
Flood zones are geographic areas that FEMA has defined according to varying levels of flood risk. Zone AE includes areas with a 1% annual chance of flooding, where base flood elevations are provided. Zone VE include coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. Zone A include areas with a 1% annual chance of flooding, where no base flood elevations are shown. The 500 Year Flood Zone includes areas that have a 0.2% annual chance of flooding.





City of Newport News Hampton Roads Sanitation District Facilities and Special Flood Hazard Areas

Legend

- HRSD Treatment Plant
- HRSD Pump Station
- HRSD Interceptor
- Interstate
- City of Newport News Boundary

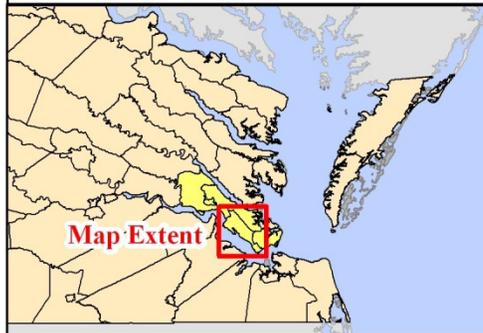
Flood Zone

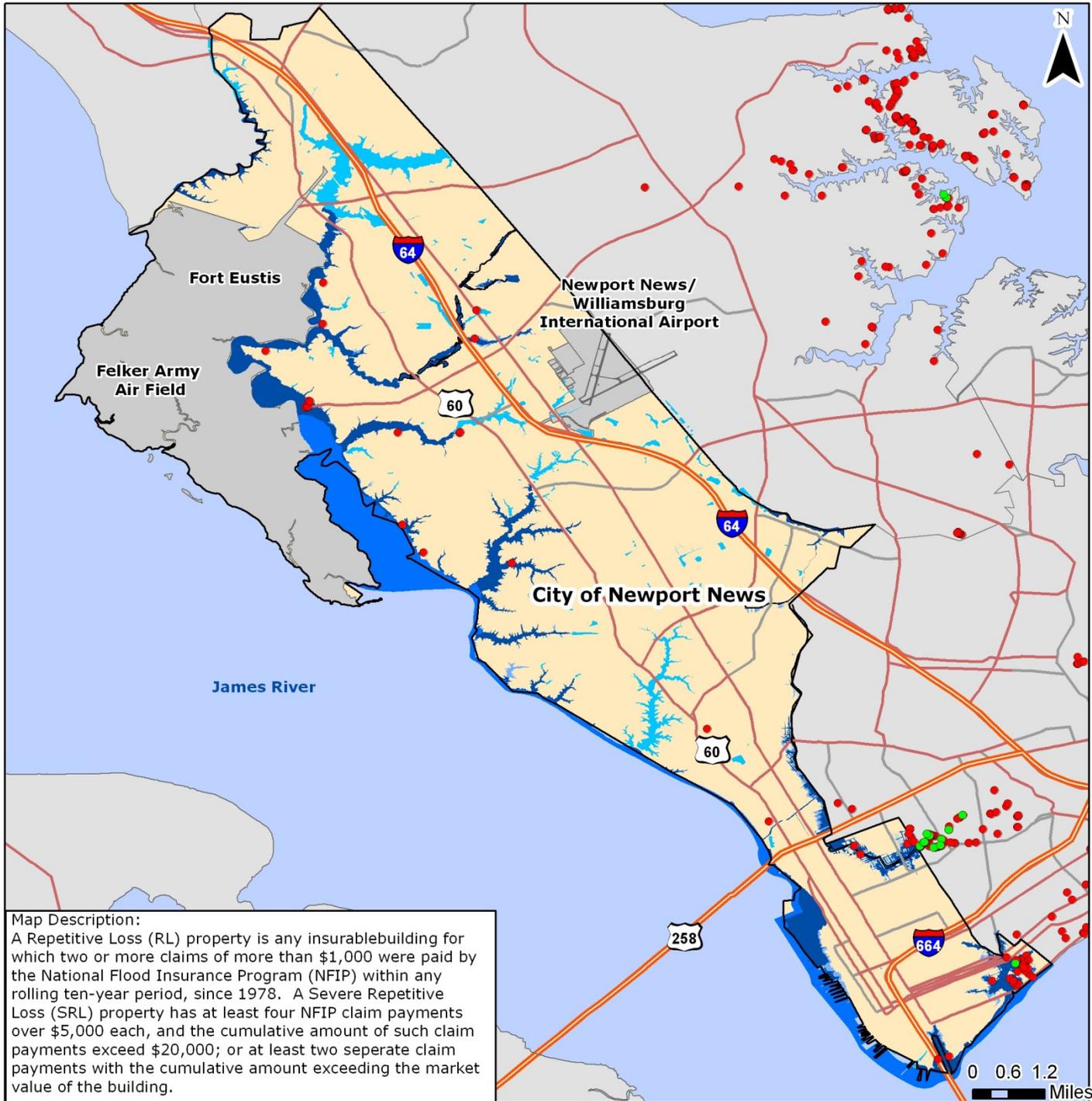
- Zone AE
- Zone VE
- Zone A
- 500 Year
- Floodway

Data Sources

Interstate, Jurisdictional Boundaries (ESRI)
 Special Flood Hazard Areas (FEMA)
 Military Installations (HRPDC)
 Airport (Newport News GIS)
 HRSD Treatment Plants, Pump Stations
 and Interceptors (HRSD)

Map Description:
 Flood zones are geographic areas that FEMA has defined according to varying levels of flood risk. Zone AE includes areas with a 1% annual chance of flooding, where base flood elevations are provided. Zone VE include coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. Zone A include areas with a 1% annual chance of flooding, where no base flood elevations are shown. The 500 Year Flood Zone includes areas that have a 0.2% annual chance of flooding.





Virginia Peninsula Hazard Mitigation Plan Update

Severe Repetitive Loss and Repetitive Loss Properties

Legend

- Severe Repetitive Loss Properties
- Repetitive Loss Properties
- City of Newport News Boundary
- Interstate
- Highways
- Major Roads

Flood Zone

- Zone AE
- Zone VE
- Zone A
- 500 Year
- Floodway

Data Sources

Interstate, Highways, Major Roads, Jurisdictional Boundaries (ESRI)
 Special Flood Hazard Areas (FEMA)
 RL and SRL Properties (VDEM via FEMA, As of 10/1/2010)
 Military Installations (HRPDC)
 Airport (Newport News GIS)

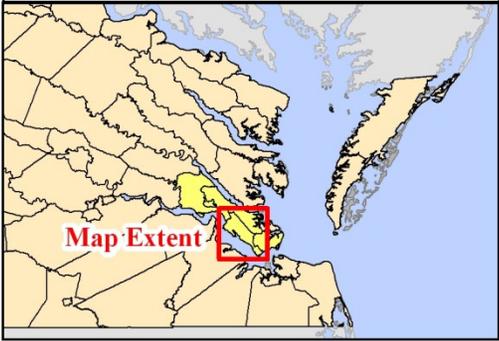


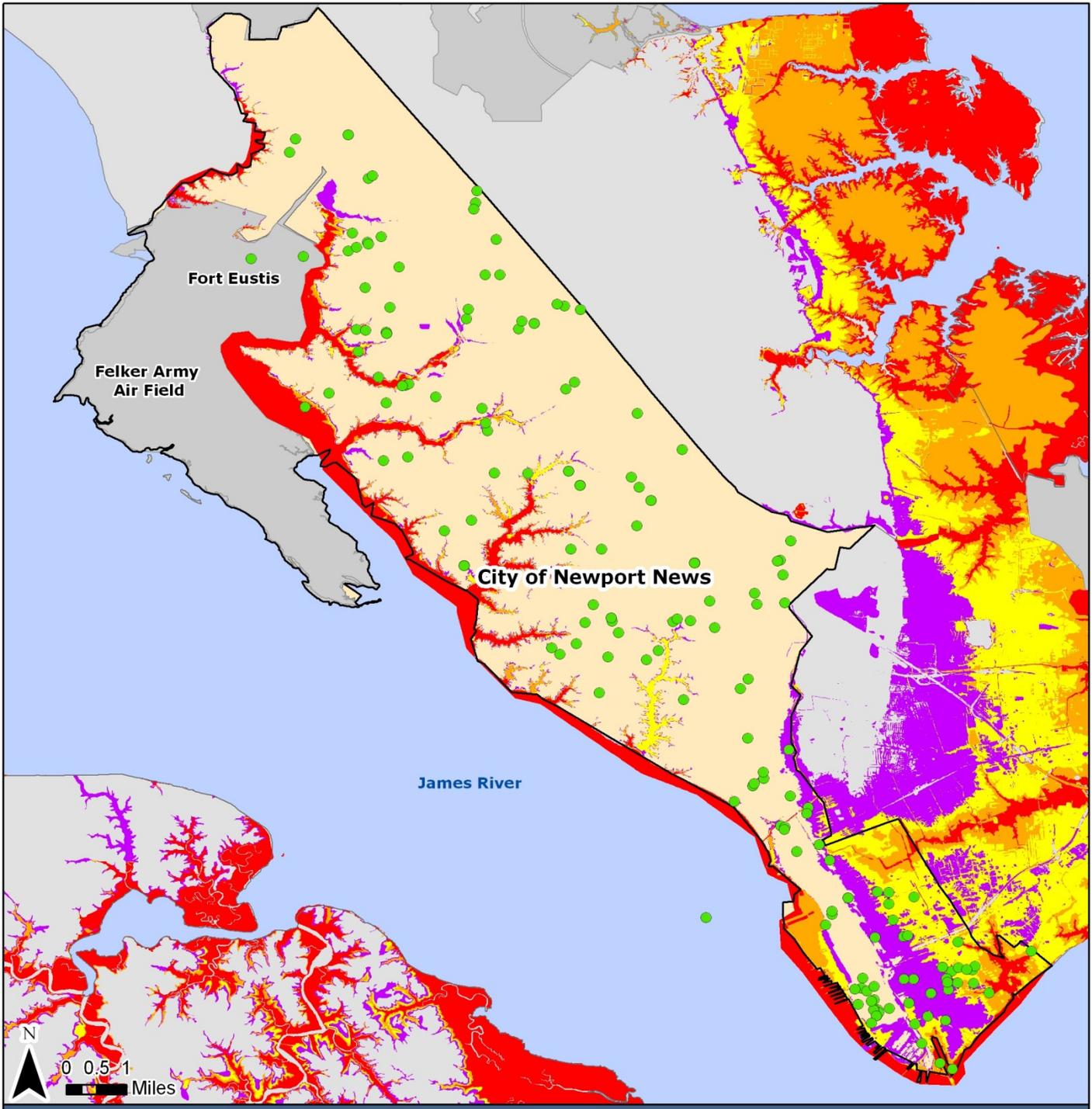







Map Description:
 A Repetitive Loss (RL) property is any insurable building for which two or more claims of more than \$1,000 were paid by the National Flood Insurance Program (NFIP) within any rolling ten-year period, since 1978. A Severe Repetitive Loss (SRL) property has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claim payments exceed \$20,000; or at least two separate claim payments with the cumulative amount exceeding the market value of the building.



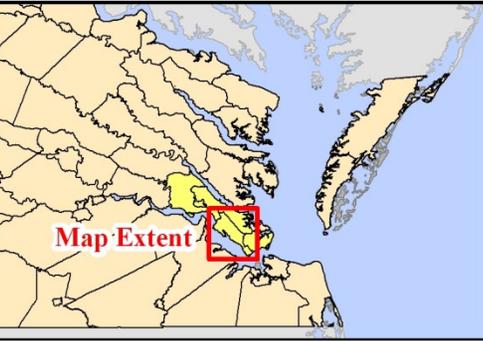


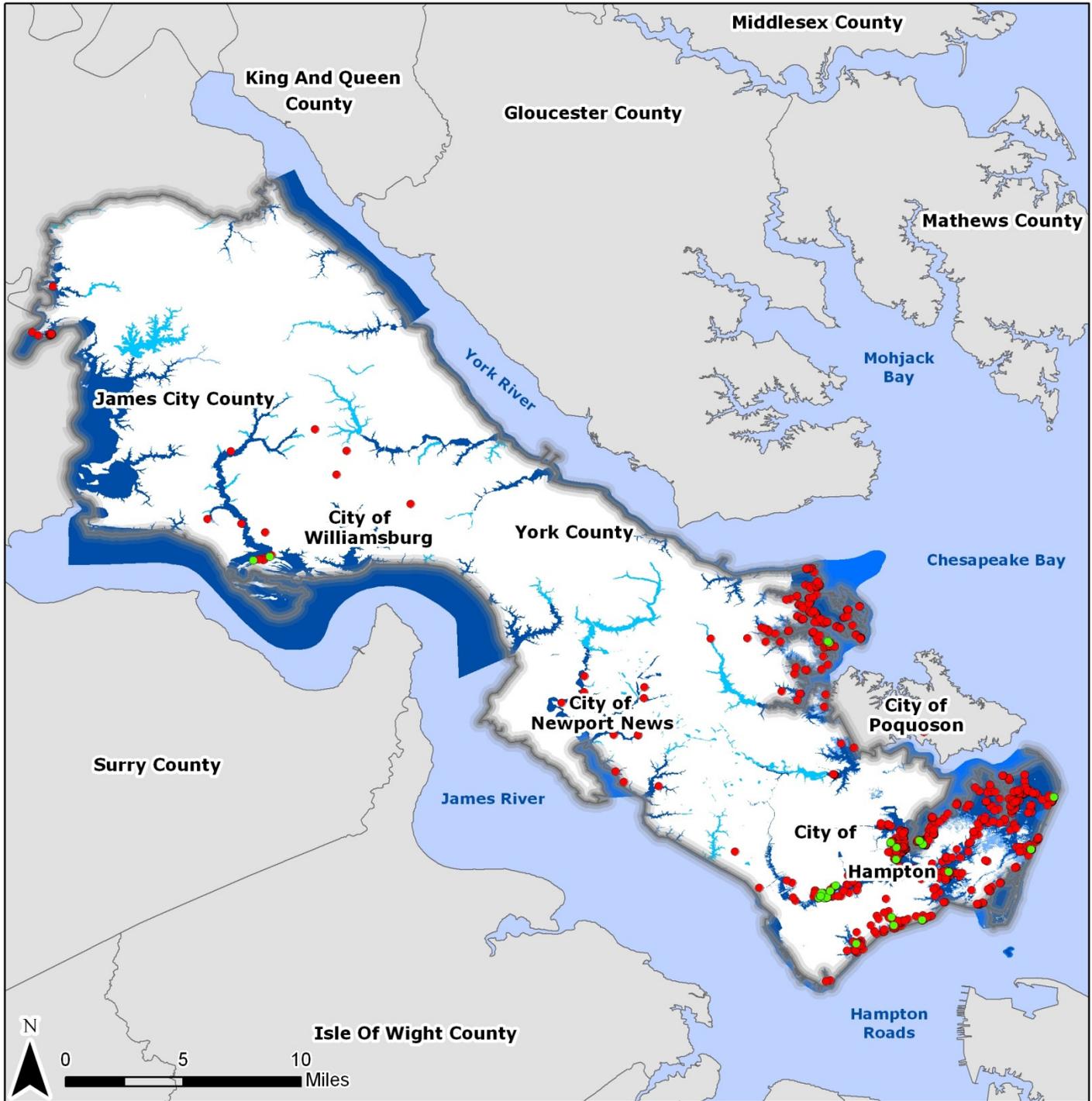
City of Newport News Storm Surge Inundation and Critical Facilities

- ### Legend
- Critical Facilities
 - City of Newport News Boundary
- ### Storm Surge
- Category 1
 - Category 2
 - Category 3
 - Category 4
 - Area Not Studied

Map Description:
 The map shows projected hurricane storm surge flooding along coastal areas. The data comes from the Virginia Hurricane Evacuation Study, a joint effort by VDEM, FEMA, USACE, and coastal localities.

- ### Data Sources
- Jurisdictional Boundaries (ESRI)
 - Storm Surge Inundation (VDEM)
 - Critical Facilities (Newport News GIS)
 - Military Installations (HRPDC)





Virginia Peninsula Hazard Mitigation Plan Update

Severe Repetitive Loss and Repetitive Loss Properties

Legend

- Severe Repetitive Loss Properties
- Repetitive Loss Properties
- Jurisdictional Boundaries

Flood Zone

- Zone AE
- Zone VE
- Zone A
- 500 Year

Map Description:
 A Repetitive Loss (RL) property is any insurable building for which two or more claims of more than \$1,000 were paid by the National Flood Insurance Program (NFIP) within any rolling ten-year period, since 1978. A Severe Repetitive Loss (SRL) property has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claim payments exceed \$20,000; or at least two separate claim payments with the cumulative amount exceeding the market value of the building.

Data Sources

Jurisdictional Boundaries (ESRI)
 Special Flood Hazard Areas (FEMA)
 RL and SRL Properties (VDEM via FEMA, As of 10/1/2010)



Virginia Peninsula Hazard Mitigation Plan Update Special Flood Hazard Areas

Legend

-  City of Williamsburg Boundary
-  Interstate
-  Highways
-  Major Roads
- Flood Zone**
-  Zone AE
-  Zone A
-  500 Year

* There are no Floodways located in the City of Williamsburg

Data Sources

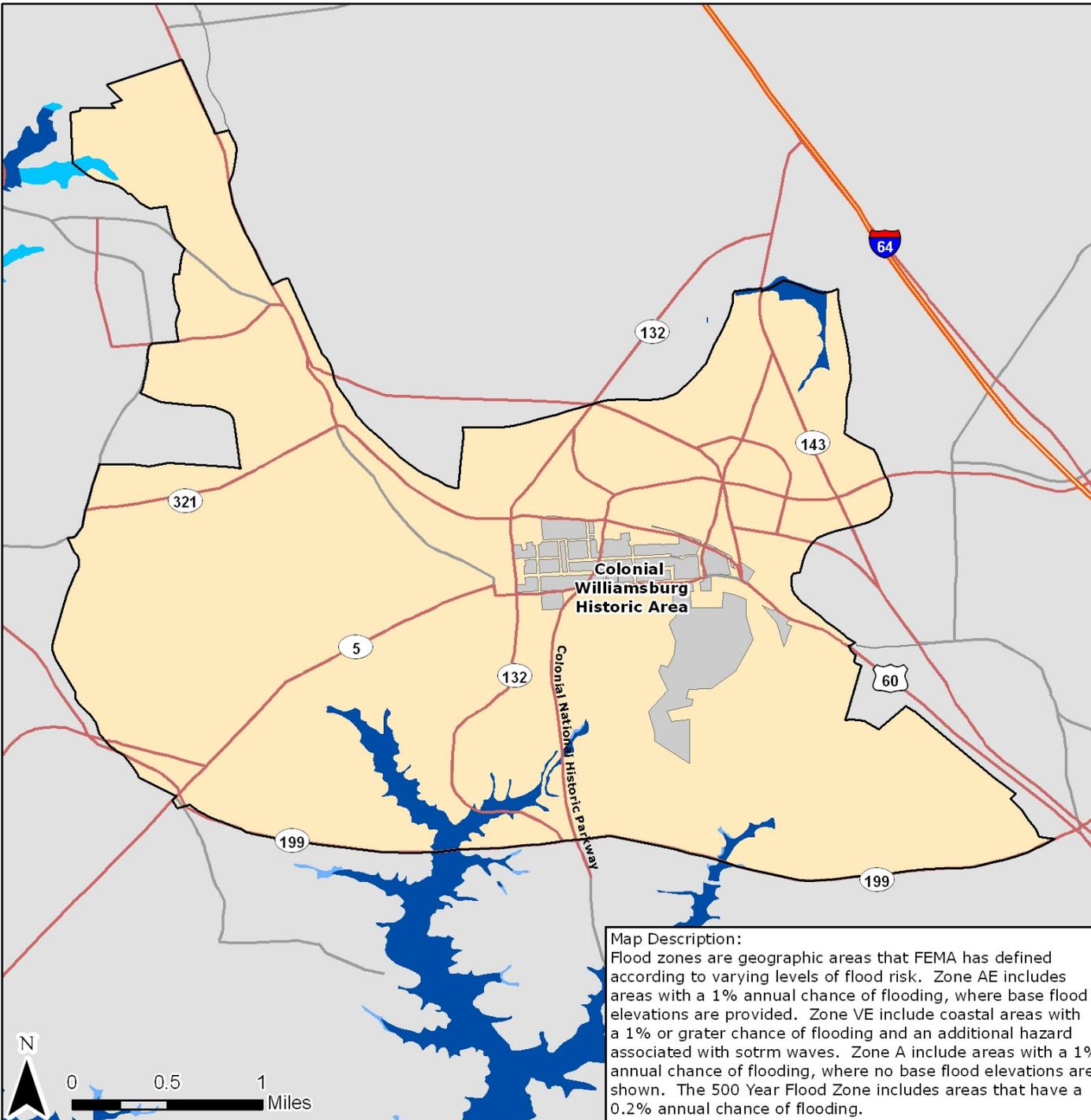
Interstate, Highways, Major Roads,
Jurisdictional Boundaries (ESRI)
Special Flood Hazard Areas (FEMA)
Colonial Williamsburg
Boundary (Williamsburg GIS)



Dewberry

Map Description:

Flood zones are geographic areas that FEMA has defined according to varying levels of flood risk. Zone AE includes areas with a 1% annual chance of flooding, where base flood elevations are provided. Zone VE include coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. Zone A include areas with a 1% annual chance of flooding, where no base flood elevations are shown. The 500 Year Flood Zone includes areas that have a 0.2% annual chance of flooding.



City of Williamsburg Special Flood Hazard Areas and Critical Facilities

Legend

- Critical Facilities
- City of Williamsburg Boundary
- Interstate
- Highways
- Major Roads

Flood Zone

- Zone AE
- Zone A
- 500 Year

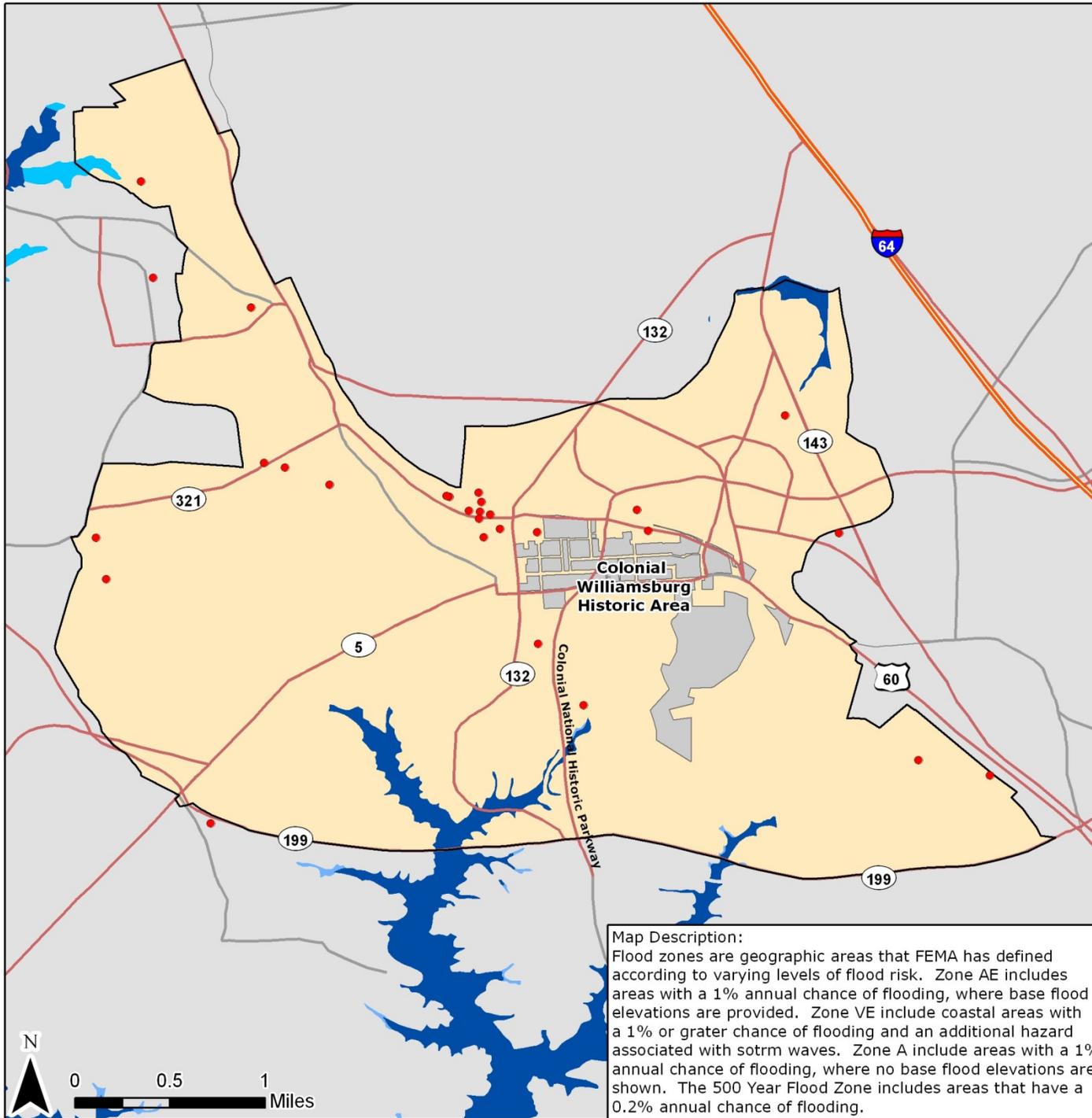
* There are no Floodways located in the City of Williamsburg

Data Sources

Interstate, Highways, Major Roads, Jurisdictional Boundaries (ESRI)
 Special Flood Hazard Areas (FEMA)
 Critical Facilities (Williamsburg GIS-centroids derived from building footprints, VEDP-public schools)
 Colonial Williamsburg Boundary (Williamsburg GIS)

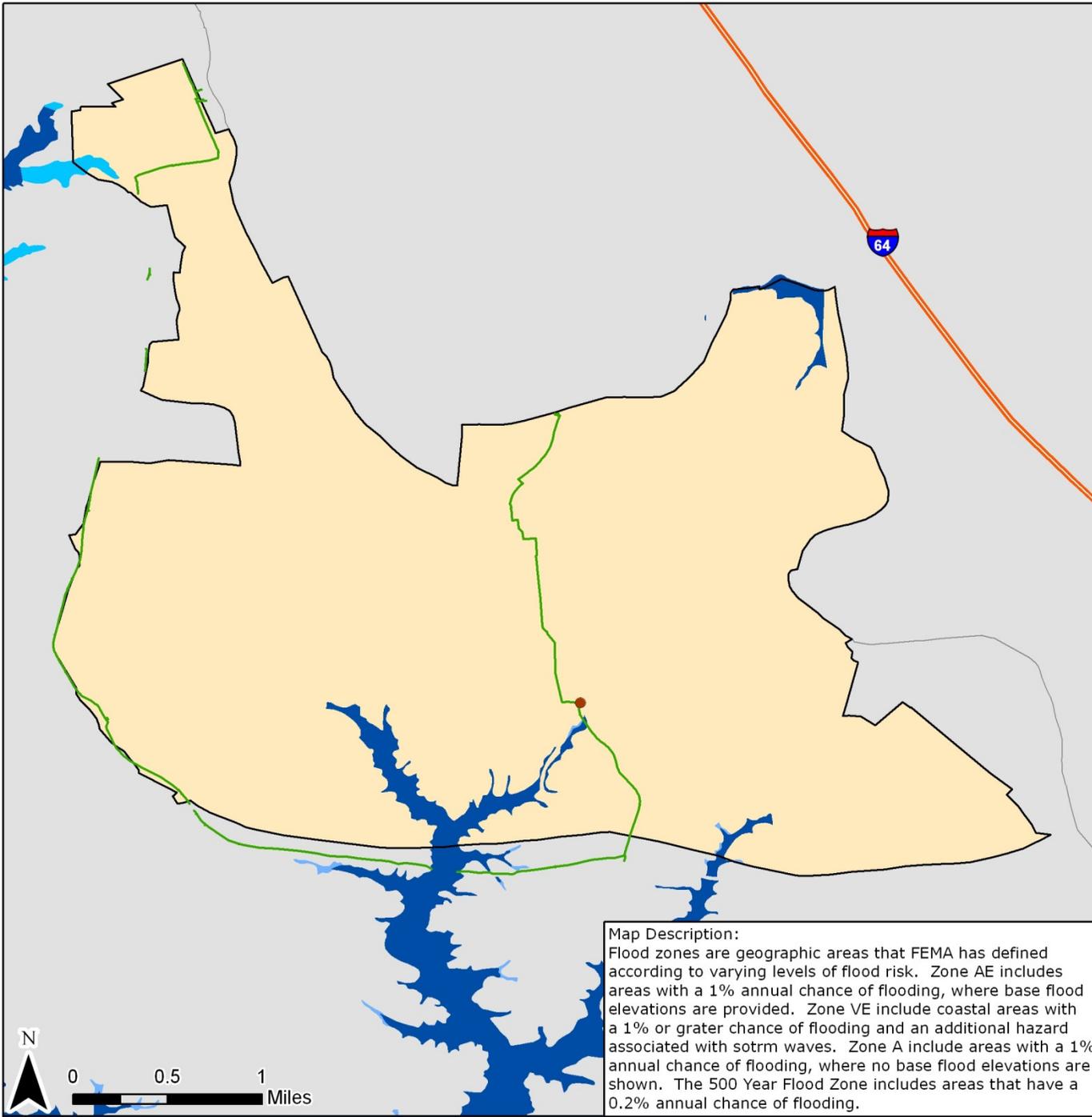


Dewberry



Map Description:
 Flood zones are geographic areas that FEMA has defined according to varying levels of flood risk. Zone AE includes areas with a 1% annual chance of flooding, where base flood elevations are provided. Zone VE include coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. Zone A include areas with a 1% annual chance of flooding, where no base flood elevations are shown. The 500 Year Flood Zone includes areas that have a 0.2% annual chance of flooding.





City of Williamsburg Hampton Roads Sanitation District Facilities and Special Flood Hazard Areas

Legend

- HRSD Pump Station
 - HRSD Interceptor
 - City of Williamsburg Boundary
 - Interstate
- ### Flood Zone
- Zone AE
 - Zone A
 - 500 Year

* There are no Floodways located in the City of Williamsburg

Data Sources

Interstate, Jurisdictional Boundaries (ESRI)
Special Flood Hazard Areas (FEMA)
HRSD Pump Station and Interceptors (HRSD)



Map Description:
Flood zones are geographic areas that FEMA has defined according to varying levels of flood risk. Zone AE includes areas with a 1% annual chance of flooding, where base flood elevations are provided. Zone VE include coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. Zone A include areas with a 1% annual chance of flooding, where no base flood elevations are shown. The 500 Year Flood Zone includes areas that have a 0.2% annual chance of flooding.



Virginia Peninsula Hazard Mitigation Plan Update

Severe Repetitive Loss and Repetitive Loss Properties

Legend

- Repetitive Loss Properties
 - City of Williamsburg Boundary
 - Interstate
 - Highways
 - Major Roads
- Flood Zone**
- Zone AE
 - Zone A
 - 500 Year

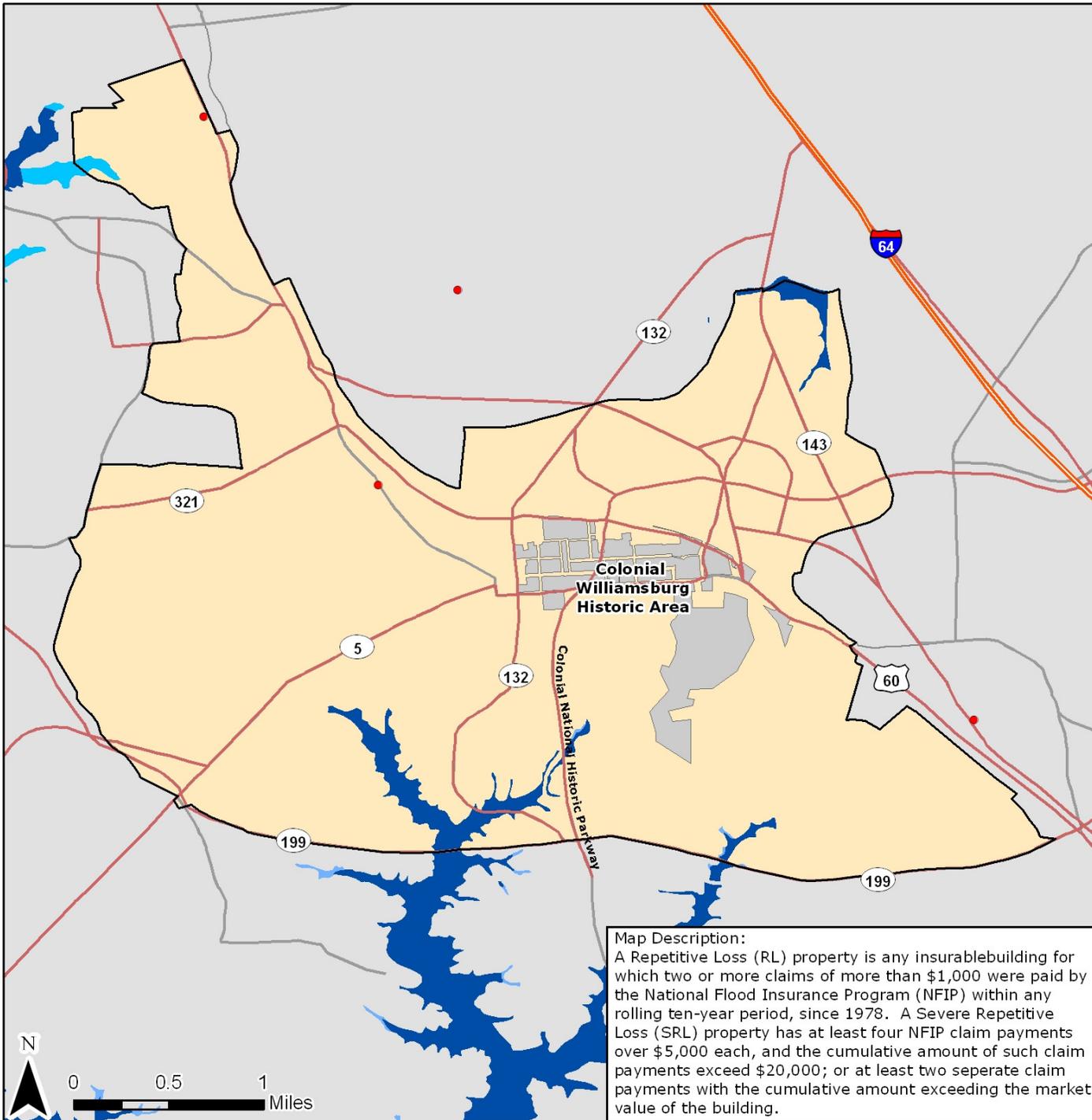
* There are no Severe Repetitive Loss properties located in the City of Williamsburg

Data Sources

Interstate, Highways, Major Roads,
Jurisdictional Boundaries (ESRI)
Special Flood Hazard Areas (FEMA)
RL Properties (VDEM via FEMA,
As of 10/1/2010)
Colonial Williamsburg
Boundary (Williamsburg GIS)



Map Description:
A Repetitive Loss (RL) property is any insurable building for which two or more claims of more than \$1,000 were paid by the National Flood Insurance Program (NFIP) within any rolling ten-year period, since 1978. A Severe Repetitive Loss (SRL) property has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claim payments exceed \$20,000; or at least two separate claim payments with the cumulative amount exceeding the market value of the building.



City of Williamsburg Storm Surge Inundation and Critical Facilities

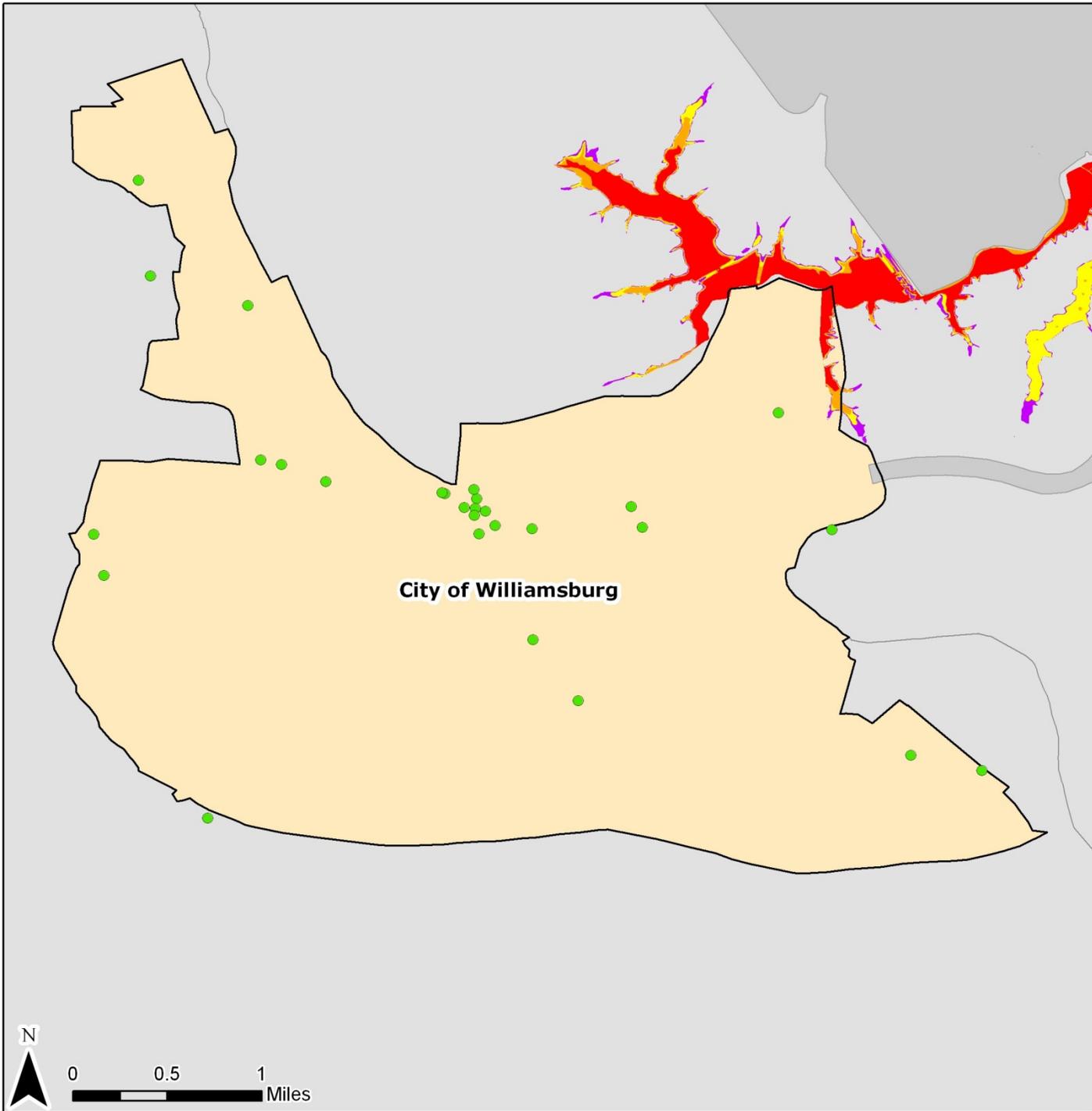
Legend

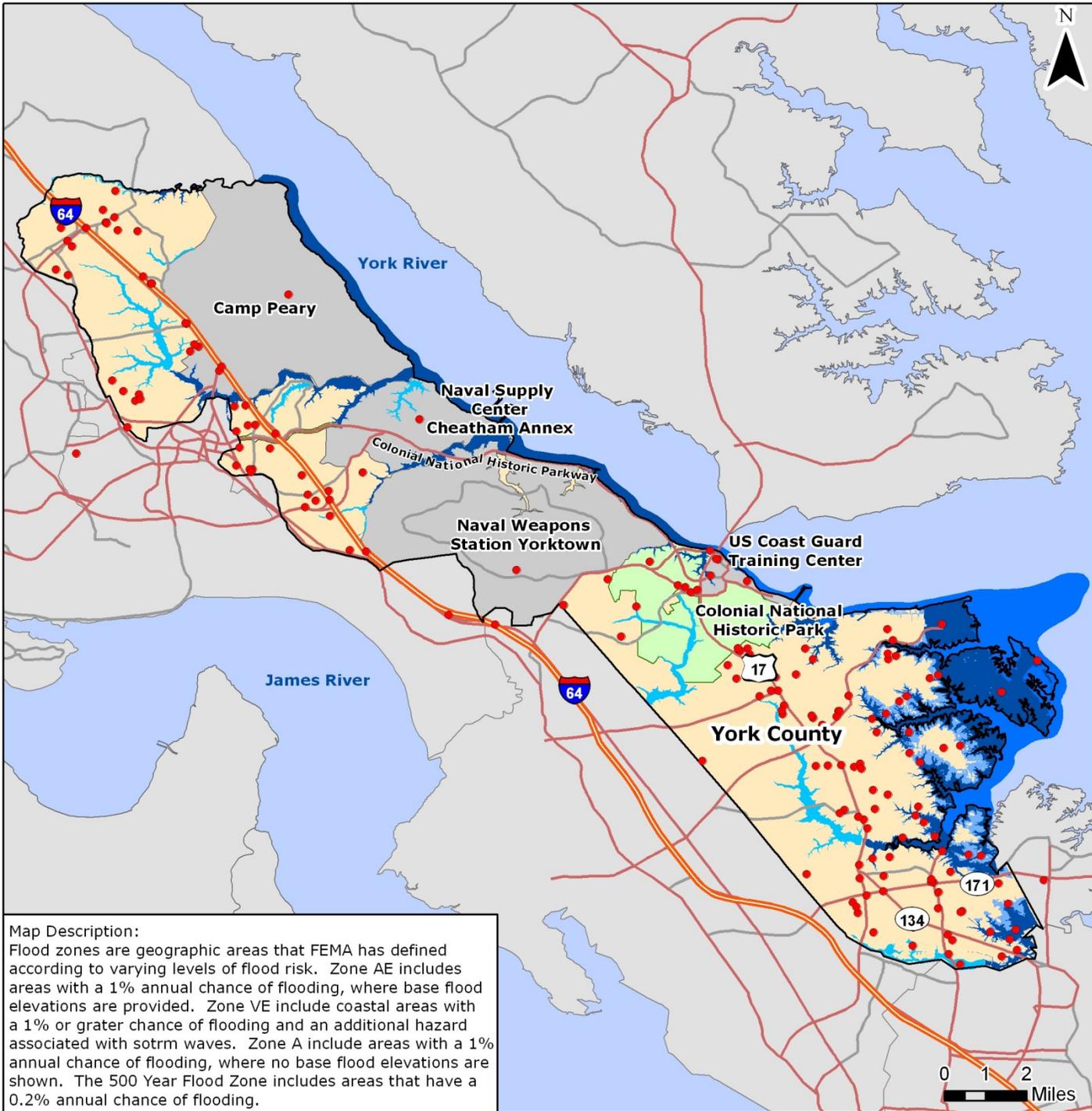
- Critical Facilities
 - City of Williamsburg Boundary
- Storm Surge**
- Category 1
 - Category 2
 - Category 3
 - Category 4
 - Area Not Studied

Map Description:
The map shows projected hurricane storm surge flooding along coastal areas. The data comes from the Virginia Hurricane Evacuation Study, a joint effort by VDEM, FEMA, USACE, and coastal localities.

Data Sources

- Jurisdictional Boundaries (ESRI)
- Storm Surge Inundation (VDEM)
- Critical Facilities (Williamsburg GIS-centroids derived from building footprints, VEDP-public schools)





York County Special Flood Hazard Areas and Critical Facilities

Legend

- Critical Facilities
- ▭ York County Boundary
- ▬ Interstate
- ▬ Highways
- ▬ Major Roads

Flood Zone

- ▭ Zone AE
- ▭ Zone VE
- ▭ Zone A
- ▭ 500 Year

** There are no Floodways located in York County*

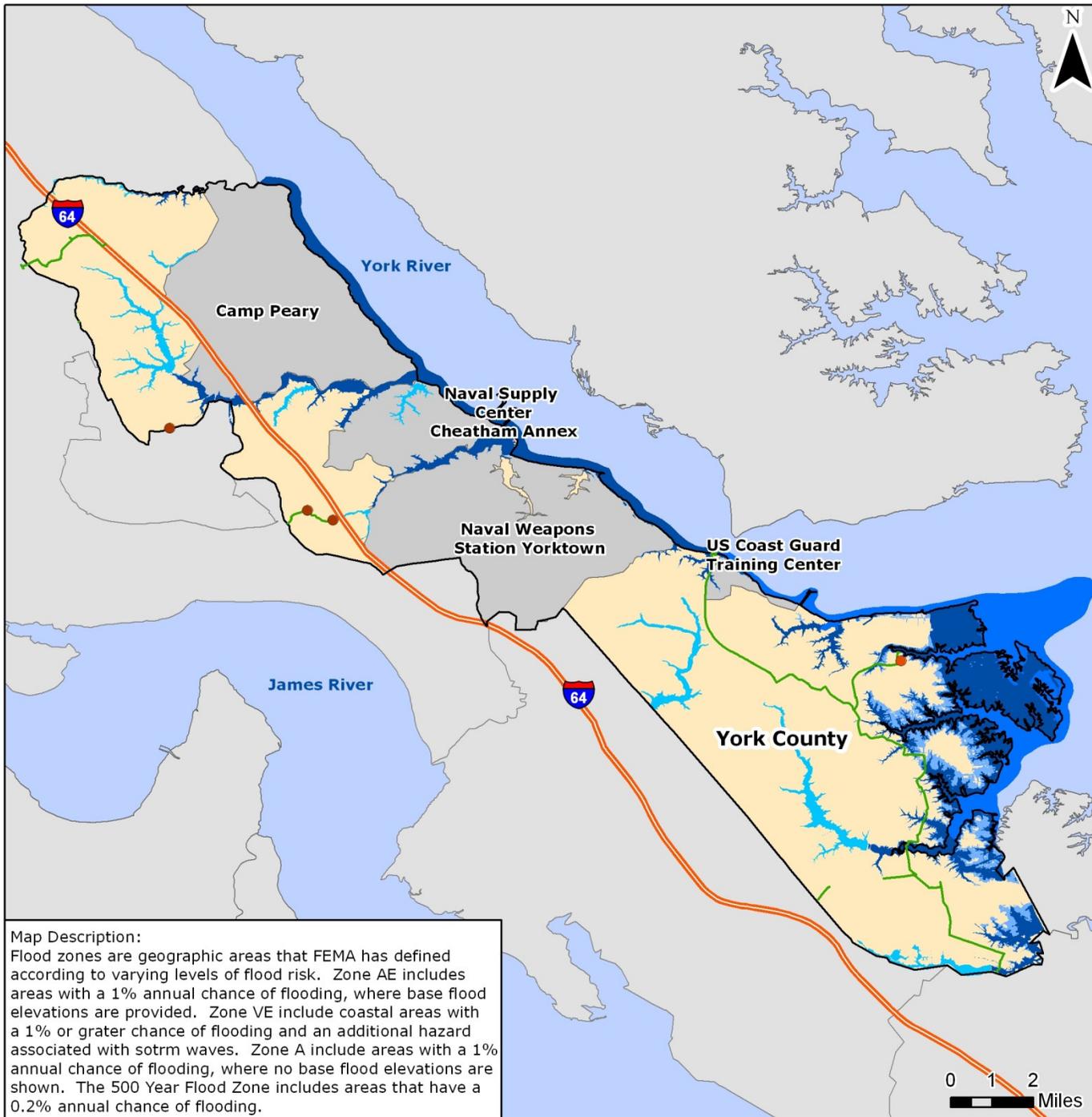
Data Sources

Interstate, Highways, Major Roads, Ferry Jurisdictional Boundaries (ESRI)
 Special Flood Hazard Areas (FEMA)
 Critical Facilities (York GIS)
 Military Installations, Park (HRPDC)

HAMPTON ROADS PLANNING DISTRICT COMMISSION **Dewberry**

Map Description:
 Flood zones are geographic areas that FEMA has defined according to varying levels of flood risk. Zone AE includes areas with a 1% annual chance of flooding, where base flood elevations are provided. Zone VE include coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. Zone A include areas with a 1% annual chance of flooding, where no base flood elevations are shown. The 500 Year Flood Zone includes areas that have a 0.2% annual chance of flooding.





York County Hampton Roads Sanitation District Facilities and Special Flood Hazard Areas

Legend

- HRSD Pump Station
- HRSD Treatment Plant
- HRSD Interceptor
- Interstate
- York County Boundary

Flood Zone

- Zone AE
- Zone VE
- Zone A
- 500 Year

** There are no Floodways located in York County*

Data Sources

Interstate, Jurisdictional Boundaries (ESRI)
 Special Flood Hazard Areas (FEMA)
 Military Installations (HRPDC)
 HRSD Pump Stations, Treatment Plant
 and Interceptors (HRSD)



Map Description:
 Flood zones are geographic areas that FEMA has defined according to varying levels of flood risk. Zone AE includes areas with a 1% annual chance of flooding, where base flood elevations are provided. Zone VE include coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. Zone A include areas with a 1% annual chance of flooding, where no base flood elevations are shown. The 500 Year Flood Zone includes areas that have a 0.2% annual chance of flooding.



York County Storm Surge Inundation and Critical Facilities

Legend

- Critical Facilities
 - York County Boundary
- Storm Surge**
- Category 1
 - Category 2
 - Category 3
 - Category 4
 - Area Not Studied

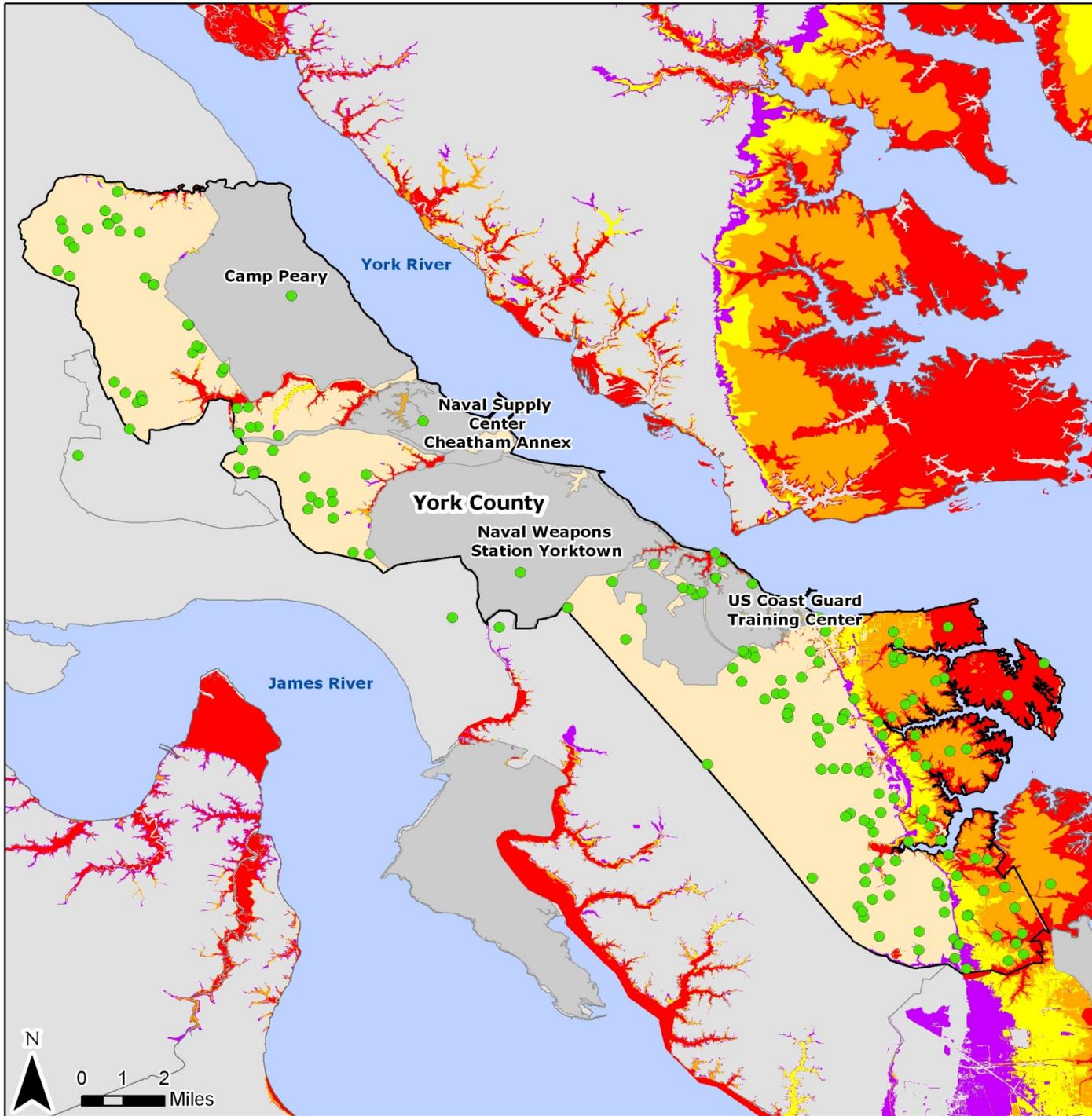
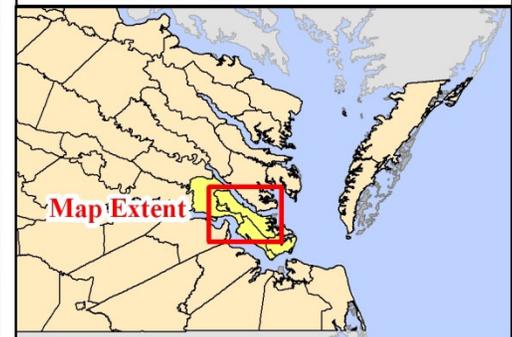
Map Description:
The map shows projected hurricane storm surge flooding along coastal areas. The data comes from the Virginia Hurricane Evacuation Study, a joint effort by VDEM, FEMA, USACE, and coastal localities.

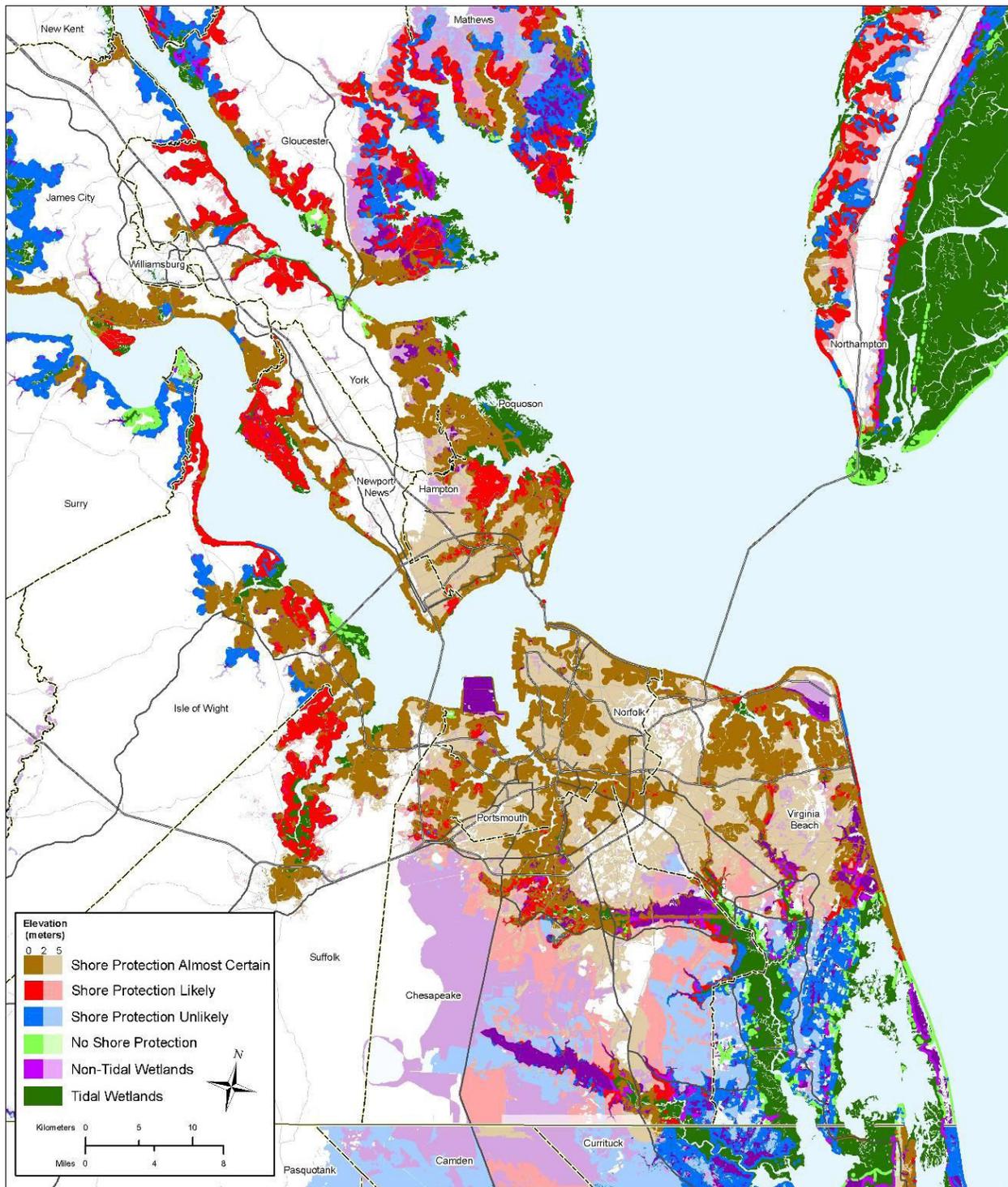
Data Sources

Jurisdictional Boundaries (ESRI)
Storm Surge Inundation (VDEM)
Critical Facilities (York County GIS)
Military Installations (HRPDC-centroids derived from polygons)



Dewberry





SOURCE: State and local governments plan for development of most land vulnerable to rising sea level along the US Atlantic Coast, J G Titus, D E Hudgens, D L Trescott, M Craghan, WHNuckols, C H Hershner, J M Kassakian, C J Linn, P G Merritt, T M McCue, J F O'Connell, J Tanski and J Wang.